

**SHORT ANSWER.** Write the word or phrase that best completes each statement or answers the question.

1) Simplify:  $(28 - 4)/3$  1) \_\_\_\_\_

Answer:  $(28 - 4)/3 = 24/3 = 8$

Explanation:

ID: cbm12h 1-1

Topic: 1.1 Basics of Arithmetic

2) Simplify:  $8 + 6 * 2$  2) \_\_\_\_\_

Answer:  $8 + 12 = 20$

Explanation:

ID: cbm12h 1-2

Topic: 1.1 Basics of Arithmetic

3) Simplify:  $5(4 + 3)$  3) \_\_\_\_\_

Answer:  $5 * 7 = 35$

Explanation:

ID: cbm12h 1-3

Topic: 1.1 Basics of Arithmetic

4) Simplify:  $\frac{20 - 15}{15 + 5}$  4) \_\_\_\_\_

Answer:  $5/20 = .25$

Explanation:

ID: cbm12h 1-4

Topic: 1.1 Basics of Arithmetic

5) Simplify:  $\frac{50 - 10}{12 + 8}$  5) \_\_\_\_\_

Answer:  $40/20 = 2$

Explanation:

ID: cbm12h 1-5

Topic: 1.1 Basics of Arithmetic

6) Simplify:  $9(8 - 5) + 5(6 + 4)$  6) \_\_\_\_\_

Answer:  $9 * 3 + 5 * 10 = 27 + 50 = 77$

Explanation:

ID: cbm12h 1-6

Topic: 1.1 Basics of Arithmetic

7) Evaluate:  $\frac{268}{4400 * 156/366}$  7) \_\_\_\_\_

Answer:  $268/(4400 * .4262295) = 268/1875.4098 = .1429021$

Explanation:

ID: cbm12h 1-7

Topic: 1.1 Basics of Arithmetic

8) Evaluate and round to 3 decimal places:  $125(6 + 0.35 * 142/678)$  8) \_\_\_\_\_

Answer:  $125 * (6 + 0.35 * 0.2094395) = 125 * (6 + 0.0733038) = 125 * (6.0733038) = 759.163$

Explanation:

ID: cbm12h 1-8

Topic: 1.1 Basics of Arithmetic

9) Evaluate:  $400(1 + .10 * 100/365)$  9) \_\_\_\_\_

Answer:  $400 * (1 + .10 * .2739726) = 400 * (1 + .02739726) = 400 * (1.02739726) = 410.959$

Explanation:

ID: cbm12h 1-9

Topic: 1.1 Basics of Arithmetic

10) Evaluate and round to one decimal place:  $9210(5 - 1.38 * 169/420)$  10) \_\_\_\_\_

Answer:  $9210 * (5 - 1.38 * 0.40238095) = 9210 * (5 - 0.5552857) = 9210(4.444714) = 40,935.8$

Explanation:

ID: cbm12h 1-10

Topic: 1.1 Basics of Arithmetic

11) Evaluate:  $\frac{2424}{1 + .2 * 166/365}$  11) \_\_\_\_\_

Answer:  $2424/(1 + .2 * .4547945) = 2424/(1 + .0909589) = 2424/1.0909589 = 2221.899$

Explanation:

ID: cbm12h 1-11

Topic: 1.2 Fractions

12) Evaluate and round to three decimal places:  $\frac{3140}{2 + 0.035 * \frac{155}{730}}$  12) \_\_\_\_\_

Answer:  $3140/(2 + 0.35 * 0.2123288) = 3140/(2 + 0.0743151) = 2910/2.074315068 = 1513.753$

Explanation:

ID: cbm12h 1-12

Topic: 1.2 Fractions

13) Evaluate:  $\frac{5000}{1 + .1 * 183/366}$  13) \_\_\_\_\_

Answer:  $5000/(1 + .1 * .5) = 5000/(1 + 0.05) = 5000/1.05 = 4761.90$

Explanation:

ID: cbm12h 1-13

Topic: 1.2 Fractions

14) Spade Realty sold lots for \$23 240 per hectare. What is the total sales value if the lot sizes, i 14) \_\_\_\_\_  
hectares,

were  $2\frac{1}{2}$ ,  $3\frac{1}{4}$ ,  $4\frac{1}{5}$ ?

Answer:  $23240 * (\frac{1}{2} + 3\frac{1}{4} + 4\frac{1}{5})$   
 $= 23240 * (2\frac{10}{20} + 3\frac{5}{20} + 4\frac{4}{20})$   
 $= 23240 * (9\frac{19}{20}) = 23240 * 9.95$   
 $= \$231238$

Explanation:

ID: cbm12h 1-14

Topic: 1.2 Fractions

15) Three mechanics worked  $15\frac{1}{2}$ ,  $14\frac{3}{4}$ ,  $18\frac{1}{8}$  hours respectively. What was the total cost of 15) \_\_\_\_\_  
labour if the mechanics were paid \$14.75 per hour?

Answer: Total Hours

$$= 15\frac{1}{2} + 14\frac{3}{4} + 18\frac{1}{8}$$
$$= 15.5 + 14.75 + 18.125$$
$$= 48.375$$

$$\text{Total cost of labor} = 48.375 * 14.75 = \$713.53$$

Explanation:

ID: cbm12h 1-15

Topic: 1.2 Fractions

16) Ana, Aamir and Charlotte worked  $11\frac{3}{4}$ ,  $14\frac{13}{20}$ , and  $22\frac{4}{5}$  hours respectively. What was the 16) \_\_\_\_\_  
total cost of labour if they were paid \$18.00 per hour?

Answer: Total Hours

$$= 11\frac{3}{4} + 14\frac{13}{20} + 22\frac{4}{5}$$
$$= 11.75 + 14.65 + 22.80$$
$$= 49.20$$

$$\text{Total cost of labor} = 49.20 * 18.00 = \$885.60$$

Explanation:

ID: cbm12h 1-16

Topic: 1.2 Fractions

17) A retailer returned 300 defective items to the manufacturer and received a credit for the retail price of \$0.75 less a discount of  $\frac{1}{3}$  of the retail price. What was the amount of the credit received by the retailer?

17) \_\_\_\_\_

Answer: Retail value =  $300(\$0.75) = \$225$   
 Credit =  $(1 - \frac{1}{3}) * \$225 = (\frac{2}{3}) * \$225 = \$150$

Explanation:

ID: cbm12h 1-17

Topic: 1.4 Applications - Averages

18) Complete the following inventory sheet and find the total value.

18) \_\_\_\_\_

Item	Quantity	Cost per Unit	Total
1	69	\$.85	
2	111	16 $\frac{2}{3}$ cents	
3	155	\$2.75	
4	350	\$1.66	

Answer:  $1161616161669 \times 0.85 = 58.65$   
 $111 \times 0.16 \frac{2}{3} = 330 \times 0.1666667 = 18.50$   
 $155 \times 2.75 = 426.25$   
 $350 \times 1.66 = 581.00$   
581.00  
 \$1084.40

Explanation:

ID: cbm12h 1-18

Topic: 1.4 Applications - Averages

19) Extend each of the following and determine the total.

19) \_\_\_\_\_

Quantity	Unit Price
48	\$2.45
48	$0.83 \frac{1}{8}$
16	\$2.12
60	$1.33 \frac{1}{6}$

Answer: 

Quantity	Unit Price	Value
48	\$2.45	\$117.60
48	$0.83 \frac{1}{8}$	39.90
16	2.12	33.92
60	$1.33 \frac{1}{6}$	<u>79.90</u>
Total:		\$271.32

Explanation:

ID: cbm12h 1-19

Topic: 1.4 Applications - Averages

20) Purchases of packs of printing paper during the last accounting period were as follows: 20) \_\_\_\_\_

<i>Number of items</i>	<i>Unit price</i>
8	\$13.00
4	\$12.00
15	\$10.00
10	\$10.50

What was the weighted average price per item?

Answer:

<i>Number of items</i>		<i>Unit price</i>		<i>Weighted value</i>
8	×	\$13.00	=	104.00
4	×	\$12.00	=	48.00
15	×	\$10.00	=	150.00
<u>10</u>	×	\$10.50	=	<u>105.00</u>
Total: 37				407.00

Average price was  $407/37 = \$11.00$

Explanation:

ID: cbm12h 1-20

Topic: 1.4 Applications - Averages

21) Purchases of an inventory item during last month were as follows: 21) \_\_\_\_\_

<i>Number of items</i>	<i>Unit price</i>
5	\$5.00
10	\$8.00
8	\$6.00
15	\$3.00

What was the weighted average price per item?

Answer:

<i>Number of items</i>		<i>Unit price</i>		<i>Weighted value</i>
5	×	\$5.00	=	25.00
10	×	8.00	=	80.00
8	×	6.00	=	48.00
<u>15</u>	×	3.00	=	<u>45.00</u>
Total: 38				198.00

Average price was  $198/38 = \$5.21$

Explanation:

ID: cbm12h 1-21

Topic: 1.4 Applications - Averages

- 22) Noriko's final mark for her Financial Mathematics course was based on four tests with different weightings. Test one counted for 10% of the final grade, test two for 20%, test three for 30% and test four for 40%. If Clara received 70% on test one, 85% on test two, 64% on test three and 72% on test four, calculate her final mark. 22) \_\_\_\_\_

$$\begin{aligned} \text{Answer: } &= 70(0.1) + 85(0.2) + 64(0.3) + 72(0.4) \\ &= 7 + 17 + 19.2 + 28.8 \\ &= 72 \end{aligned}$$

**Explanation:**

ID: cbm12h 1-22

Topic: 1.4 Applications - Averages

- 23) On a trip, a motorist purchased gasoline as follows: 66 litres at 69.0 cents per litre; 69 litres 23) \_\_\_\_\_ cents per litres; 80 litres at 71.5 cents per litre; and 57 litres at 74.5 cents per litre.  
 a) What was the average number of litres per purchase?  
 b) What was the average cost per litre?  
 c) If the motorist averaged 9.75 km per litre, what was her average cost of gasoline per kilometre?

$$\begin{aligned} \text{Answer: a) } &66 + 69 + 80 + 57 = 272 \\ &\text{Average number of litres} = 272 \div 4 = 68 \\ \text{b) Average cost per litre:} & \\ \text{Total cost} &= 66 \times 69.0 = 45.54 \\ 69 \times 70.5 &= 48.645 \\ 80 \times 71.5 &= 57.20 \\ 57 \times 74.5 &= \underline{42.465} \\ &193.85 \text{ cents} \\ \text{Average cost} &= 193.86 \div 272 = 71.27 \text{ cents} \\ \text{c) Average cost per km} &= 71.27 \div 9.75 = 7.3097436 \text{ cents} \end{aligned}$$

**Explanation:**

ID: cbm12h 1-23

Topic: 1.4 Applications - Averages

- 24) Dorian Frump invested \$12 500 in a business on January 1. She withdrew \$850 on April 3, 24) \_\_\_\_\_ reinvested \$1920 on August 1, and withdrew \$700 on September 1. What is Don's average monthly investment balance for the year?

$$\begin{aligned} \text{Answer: Weighted investment:} & \\ \text{January 1 — March 31:} &12500 \times 3/12 = 3125.0000 \\ \text{April 1 - July 31:} &11650 \times 4/12 = 3883.3333 \\ \text{August 1 - August 31:} &13570 \times 1/12 = 1130.8333 \\ \text{September 1 - December 31:} &12870 \times 4/12 = \underline{4290.0000} \\ \text{Average investment balance} &= \$12429.17 \end{aligned}$$

**Explanation:**

ID: cbm12h 1-24

Topic: 1.4 Applications - Averages

- 25) Tommy Hughes invested \$10 000 in a business on January 1. He withdrew \$1000 on March 1, reinvested \$5000 on July 1, and withdrew \$4000 on October 1. What is Tommy's average monthly investment balance for the year? 25) \_\_\_\_\_

Answer: Weighted investment:

January 1 - February 28:	$10000 \times 2/12 = 1666.6700$
March 1 - June 30:	$9000 \times 4/12 = 3000.0000$
August 1 - August 31:	$14000 \times 3/12 = 3500.0000$
September 1 - December 31:	$10000 \times 3/12 = \underline{2500.0000}$
Average investment balance =	\$10666.67

Explanation:

ID: cbm12h 1-25

Topic: 1.4 Applications - Averages

- 26) The following information is shown in your investment account for last year. The balance on January 1 was \$7600.00. A withdrawal of \$420.00 was made on March 1. A deposit of \$1690.00 was made on May 1 and another deposit of \$130.00 was made on October 1. What was the average monthly balance for the year in your account? 26) \_\_\_\_\_

Answer: *Date Balance Months Weighted value*

January	1	7600	2	15 200
March	1	7180	2	14 360
May	1	8870	5	44 350
October	1	8740	<u>3</u>	<u>26 220</u>
Total:			12	100 130

Average monthly balance =  $100130/12 = \$8344.17$

Explanation:

ID: cbm12h 1-26

Topic: 1.4 Applications - Averages

- 27) Kevin Ash earns a semi-monthly salary of \$1023.40 and works a regular workweek of 40 hours. 27) \_\_\_\_\_
- a) What is Kevin's hourly rate of pay?
- b) If Kevin's gross earnings in one pay period were \$1390.47, for how many hours of overtime was he paid at time and one-half of his regular pay?

Answer: a) Semimonthly pay = \$1023.40

Yearly salary = \$24 561.60

Weekly gross pay =  $24561.60 \div 52 = \$472.34$

Hourly rate =  $472.34 \div 40 = \$11.81$

b) Gross pay = 1390.47

Regular pay = - 1023.40

Overtime pay = 367.07

Number of overtime hours =  $(367.07 \div 1.5) \div 11.81 = 20.72$  hrs.

Explanation:

ID: cbm12h 1-27

Topic: 1.5 Applications - Payroll

28) R.J. earns \$11.70 an hour, with time-and-a-half for hours worked over 36 a week. His clock hours for a week are 10.5, 7.5, 11, 13, and 9.75. Determine his gross earnings for a week. 28) \_\_\_\_\_

Answer: Total hours =  $10.5 + 7.5 + 11 + 13 + 9.75 = 51.75$   
 Regular weekly earnings =  $36 \times \$11.70 = \$421.20$   
 Overtime earnings =  $(51.75 - 36) \times \$11.70 \times 1.5 = \$276.41$   
 Gross = Regular time + Overtime =  $\$421.20 + \$276.41 = \$697.61$

Explanation:

ID: cbm12h 1-28

Topic: 1.5 Applications - Payroll

29) Florence Lamb is paid a commission of 10 3/4% on her net sales and is authorized to draw up to \$900.00 a month. What is the amount due to Florence at the end of a month in which she drew \$820.00, had sales of \$14 660.00, and sales returns of \$331.20? 29) \_\_\_\_\_

Answer: Gross sales = \$14660.00  
 Less: returns = 331.20  
 Net sales = 14328.80  
 Gross commission =  $14328.80 \times .1075 = 1540.35$   
 Less: drawings 820.00  
 Amount due \$720.35

Explanation:

ID: cbm12h 1-29

Topic: 1.5 Applications - Payroll

30) A sales representative selling computer parts receives a commission of 3.5% on net sales up to \$15 000.00, 7% on the next \$6000.00, and 9% on any further sales. If his sales for a month were \$34 250.00 and sales returns were \$1055.00, what was his commission for the month? 30) \_\_\_\_\_

Answer: Gross sales = \$34250.00  
 Less: returns = 1055.00  
 Net sales = \$33195.00  
 Commission: =  $.035 \times 15000.00 = \$525.00$   
                   =  $.07 \times 6000.00 = 420.00$   
                   =  $.09 \times 12195.00 = \underline{1097.55}$   
 Total commission = \$2042.55

Explanation:

ID: cbm12h 1-30

Topic: 1.5 Applications - Payroll

31) A salesperson had gross earnings of \$943.25 for last week on gross sales of \$8320.00. If returns and allowances were 5.5% of gross sales, what is his rate of commission based on net sales? 31) \_\_\_\_\_

Answer: Net sales =  $(1 - .055) \times 8320 = 7862.40$   
 Commission rate =  $\frac{943.25}{7862.40} = 11.997\%$

Explanation:

ID: cbm12h 1-31

Topic: 1.5 Applications - Payroll



- 32) A salesperson is paid a weekly salary of \$350.00 or a commission of 14.5% of his sales, whichever is the greater. What is his earnings for a week in which his sales were 32) \_\_\_\_\_
- a) \$2480.00?  
b) \$3780.00?

Answer: a) Salary = \$350.00  
 Commission = .145 \* 2480.00 = \$359.60  
 Gross earnings = \$709.60

b) Salary = \$350.00  
 Commission = .145 \* 3780.00 = \$548.10  
 Gross earnings = \$898.10

Explanation:

ID: cbm12h 1-32

Topic: 1.5 Applications - Payroll

- 33) Beth's annual salary is \$42 120.00. Her regular work-week is 36 hours and she is paid semi-monthly. 33) \_\_\_\_\_
- a) Calculate her gross pay period  
 b) Calculate her hourly rate of pay  
 c) Calculate her gross pay for a period in which she works 12 hours of overtime at time and one-half regular pay.

Answer: a)  $\frac{42120}{2 \times 12} = \$1755.00$

b)  $\frac{42120}{52 \times 36} = \$22.50$

c) Overtime =  $12 \times 22.50 \times 1.5 = \$405.00$   
 Gross pay =  $1755.00 + 405.00 = \$2160.00$

Explanation:

ID: cbm12h 1-33

Topic: 1.5 Applications - Payroll

- 34) Scott Rae had gross earnings of \$554.30 for last week. Scott earns a base salary of \$350.00 on a weekly quota of \$4 500.00. If his sales for the week were \$6124.00, what is his commission rate? 34) \_\_\_\_\_

Answer: Gross earnings = \$554.30  
 Less: base salary = 350.00  
 Commission: = \$204.30  
 Sales for week = \$6124.00  
 Quota = 4500.00  
 Commission sales = \$1624.00  
 Rate of commission =  $\frac{204.30}{1624.00} = 12.58\%$

Explanation:

ID: cbm12h 1-34

Topic: 1.5 Applications - Payroll

35) A.J. is paid an annual salary of \$41 840.00. She is paid monthly on a 40-hour work week. What is the gross pay for a pay period in which she works 9 hours overtime at time-and-a-half regular pay? 35) \_\_\_\_\_

Answer: Weekly pay =  $\frac{41840.00}{52} = 804.6154$

Hourly pay =  $\frac{804.62}{40} = \$20.1154$

Regular monthly earnings =  $\frac{41840}{12} = 3486.67$

Overtime earnings =  $20.1154 \times 9 \times 1.5 = 271.56$

Gross = Regular time + Overtime =  $3486.66 + 271.56 = \$3758.22$

Explanation:

ID: cbm12h 1-35

Topic: 1.5 Applications - Payroll

36) Corrine Davis had gross earnings of \$937.50 for the week. If she receives a base salary of \$664.00 on a quota of \$7800.00 and a commission of 6.75% on sales exceeding the quota, what were Corrine's sales for the week? 36) \_\_\_\_\_

Answer: Gross earnings = 937.50

Less: base salary = 664.00

Commission 273.50

Commission sales =  $\frac{273.50}{.0675} = 4051.85$

Sales for week =  $$(7800 + 4051.85) = \$11 851.85$

Explanation:

ID: cbm12h 1-36

Topic: 1.5 Applications - Payroll

37) Abigail receives a commission of 4.5% on the first \$1250.00 of sales during a week. On the next \$4500.00 she receives a commission of 11.5%. On any additional sales, the commission rate is 13.75%. Find her gross earnings for a week during which her sales amount to \$14 200.00. 37) \_\_\_\_\_

Answer: Commission on first \$1250.00 is  $0.045 \times 1250.00 = 56.25$

Commission on next \$4500.00 is  $0.115 \times 4500.00 = 517.50$

Commission on remainder =  $0.1375 \times 8450 = 1161.875$

After rounding to the nearest cent, gross earnings are \$1293.63.

Explanation:

ID: cbm12h 1-37

Topic: 1.5 Applications - Payroll

- 38) Last week Dana worked 46 hours. For the regular workweek of 40 hours she is paid \$12.40 per hour, and for every hour over 40 hours she is paid at time and one-half regular pay. How much did she earn last week? 38) \_\_\_\_\_

Answer: For the first 40 hours =  $40(12.40) = 496.00$   
 For the next 6 hours =  $6(12.40 + 6.20) = 111.60$   
 The total =  $496.00 + 111.60 = \$607.60$

Explanation:

ID: cbm12h 1-38

Topic: 1.5 Applications - Payroll

- 39) Kim Farrena earns \$17.60 per hour. Overtime from Monday to Friday is paid at time and one-half regular pay for any hours over 7 1/2 per day. Overtime on weekends is paid at double the regular rate of pay. Last week Kim worked regular hours on Monday, Wednesday, and Friday, 8.5 hours on Tuesday, 11.75 hours on Thursday, and 5 hours on Saturday. Determine Kim's gross wages by each of the two methods. 39) \_\_\_\_\_

Answer: Method A

Regular hours = $37.5 \times 17.60$	=	660.00
Overtime pay = $5.25 \times 17.60 \times 1.50$	=	138.60
$5 \times 17.60 \times 2$	=	<u>176.00</u>
Gross earnings	=	\$974.60

Method B

At regular rate: $47.75 \times 17.60$	=	840.40
Overtime premium: $5.25 \times 17.60 \times 0.50$	=	46.20
Overtime premium $5 \times 17.60 \times 1$	=	<u>88.00</u>
Gross earnings	=	\$974.60

Explanation:

ID: cbm12h 1-39

Topic: 1.5 Applications - Payroll

- 40) C.O. is paid a semi-monthly salary of \$1 250.00. If his regular work week is 35 hours, what is his hourly rate of pay? 40) \_\_\_\_\_

Answer: Annual salary =  $1250.00 \times 24 = 30000.00$

$$\text{Weekly pay} = \frac{30000}{52} = 576.92$$

$$\text{Hourly rate} = \frac{576.92}{35} = \$16.48$$

Explanation:

ID: cbm12h 1-40

Topic: 1.5 Applications - Payroll

- 41) C.O. is paid a semi-monthly salary of 2 754.30. If his regular work week is 42 hours, what is his hourly rate of pay? 41) \_\_\_\_\_

Answer: Annual salary =  $2754.30 \times 24 = 66103.20$

$$\text{Weekly pay} = \frac{66103.20}{52} = 1271.22$$

$$\text{Hourly rate} = \frac{1271.22}{42} = \$30.27$$

Explanation:

ID: cbm12h 1-41

Topic: 1.5 Applications - Payroll

- 42) An employee receives a gross pay of \$750.73 for 47.25 hours of work. What is the hourly rate of pay if a regular work week is 37.5 hours and overtime is paid at time-and-a-half the regular rate of pay? 42) \_\_\_\_\_

Answer: Let the regular rate of pay be  $y$ .

$$\text{Regular weekly pay} = 37.5y$$

$$\text{Overtime pay} = (9.75 \times 1.5)y = 14.625y$$

$$\text{Total pay} = 37.5y + 14.625y = 750.7$$

$$52.125y = 750.73$$

$$y = 14.40$$

The regular rate of pay is \$14.40

Explanation:

ID: cbm12h 1-42

Topic: 1.5 Applications - Payroll

- 43) Ali checked his pay stub on his employee portal and it showed gross earnings of \$596.00 for 51 hours of work. What is his hourly rate of pay if the regular workweek is 40 hours and overtime is paid at time and one-half the regular rate of pay? 43) \_\_\_\_\_

$$\text{Answer: Total hours} = 51$$

$$\text{Regular hours} = 40$$

$$\text{Overtime hours} = 11$$

At time-and-a-half, overtime hours are equivalent to

$$11 \times 1.5 = 16.5 \text{ regular hours}$$

$$\text{Rate of pay} = 596/56.5 = \$10.55$$

Explanation:

ID: cbm12h 1-43

Topic: 1.5 Applications - Payroll

- 44) Barb's Home Income Tax business operates only during tax season. Last season Barb grossed \$38 790 including GST. During that season she spent \$9500 before GST on her paper and supply purchases. How much does Barb owe Revenue Canada for GST? 44) \_\_\_\_\_

Answer: Barb's revenue of \$38 790 includes 5% GST.

$$\text{GST taxable revenue} = \frac{38790}{1.05} = 36\,942.86$$

$$\text{GST collected} = 5\% \text{ of } 36\,942.86 = 1\,847.14$$

$$\text{GST paid} = 5\% \text{ of } 9\,500 = 475.00$$

$$\text{Barb owes Revenue Canada } \$1847.14 - \$475 = \$1372.14$$

Explanation:

ID: cbm12h 1-44

Topic: 1.6 Applications - Taxes

- 45) "Save the tax" is a popular advertising tactic. How much would you save on the purchase of a sweater with a list price of \$52.00 in a Manitoba store during a "Save the PST" promotion? 45) \_\_\_\_\_

Answer: Savings on PST = 7% of \$52.00 = 0.07(52.00) = \$3.64

Explanation:

ID: cbm12h 1-45

Topic: 1.6 Applications - Taxes

- 46) A retail chain sells snowboards for \$855.00 plus GST and PST. What is the price difference for consumers in London, Ontario, and Lethbridge, Alberta? 46) \_\_\_\_\_

Answer: Total cost in London

Retail price	=	\$855.00
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HST = 13% of \$855.00 = 0.13(855)	=	<u>\$111.15</u>
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Total cost in London	=	<u>\$966.15</u>
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Total cost in Lethbridge

Retail price	=	\$855.00
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GST = 5% of \$855.00 = 0.05(855)	=	\$42.75
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PST	=	<u>nil</u>
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Total cost in Lethbridge	=	<u>\$897.75</u>
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Difference = PST	=	\$68.40
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Explanation:

ID: cbm12h 1-46

Topic: 1.6 Applications - Taxes

- 47) Emily's residence is assessed by the local taxation department at \$249 500.00. Calculate the property taxes paid on this property if the existing mill rate is 15. 47) \_\_\_\_\_

$$\text{Answer: } 249500 \times \frac{15}{1000} = \$3742.50$$

Explanation:

ID: cbm12h 1-47

Topic: 1.6 Applications - Taxes

48) Calculate the property tax on a property located in the City of Brampton and assessed at \$326 500 if the current tax rate is 1.05351%. 48) \_\_\_\_\_

Answer: Property tax = \$326 500 × 1.05351/100 = \$3439.71

Explanation:

ID: cbm12h 1-48

Topic: 1.6 Applications - Taxes

49) Sean's residence is assessed by the local taxation department at \$160 000. Calculate the property taxes paid on this property if the existing mill rate is 20. 49) \_\_\_\_\_

Answer:  $160\,000 \times \frac{20}{1000} = \$3200.00$

Explanation:

ID: cbm12h 1-49

Topic: 1.6 Applications - Taxes

50) The town of Pandora assesses property at market value. How much will the owner of a house valued at \$325 000 owe in taxes if this year's mill rate has been set at 21.386? 50) \_\_\_\_\_

Answer: Property tax =  $32500 \left[ \frac{21.368}{1000} \right] = \$6950.45$

Explanation:

ID: cbm12h 1-50

Topic: 1.6 Applications - Taxes

51) A town has an assessed residential property value of \$350 000 000. The town council must the following expenditures: 51) \_\_\_\_\_

Education:	\$11 050 000
General Purposes:	\$2 100 000
Recreation:	\$270 000
Public works:	\$670 000
Police and fire protection:	\$857 500

a) Suppose 70% of the expenditures are charged against residential real estate. Calculate total property taxes that must be raised.

b) What is the mill rate?

c) What is the property tax on a property assessed at \$235 000?

Answer: a) Total expenditure =  $$(11050000 + 2100000 + 270000 + 670000 + 958500)$   
= 14947500

Total residential property tax =  $0.70(14947500) = \$10463250$

b) Residential mill rate =  $\frac{10463250}{350000000}(1000) = 29.895$

c) Property tax =  $\$235000 \left[ \frac{29895}{1000} \right] = \$7025.33$

Explanation:

ID: cbm12h 1-51

Topic: 1.6 Applications - Taxes

52) Extend and total the following invoice.

52) \_\_\_\_\_

Quantity	Description	Unit Price	Amount
77	Item A	\$0.65	_____
208	Item B	\$83	_____
621	Item C	\$1.19	_____
414	Item D	\$1.95	_____
	Total		_____

$$\begin{aligned}
 \text{Answer: } 77 \times 0.65 &= \$50.05 \\
 208 \times 0.83\frac{1}{4} &= 173.16 \\
 621 \times 1.19 &= 738.99 \\
 414 \times 1.95 &= \underline{807.30} \\
 &= \$1769.50
 \end{aligned}$$

Explanation:

ID: cbm12h 1-52

Topic: 1.4 Applications - Averages

53) Denise Jantz invested \$35 000 on January 1 in a partnership. She withdrew \$5000 on June 1, withdrew a further \$1900 on August 1, and reinvested \$6 000 on November 1. What was her average monthly investment balance for the year?

53) \_\_\_\_\_

$$\begin{aligned}
 \text{Answer: January 1 - May 31:} & \quad 35000 \times 5 = 175000 \\
 \text{June 1 - July 31:} & \quad 30000 \times 2 = 60000 \\
 \text{August 1 - October 31:} & \quad 28100 \times 3 = 84300 \\
 \text{November 1 - December 31:} & \quad 34100 \times \frac{2}{12} = \underline{68200} \\
 \text{Total} & \quad 387500 \\
 \text{Average monthly investment} &= \frac{387500}{12} = \$32\,291.67
 \end{aligned}$$

Explanation:

ID: cbm12h 1-53

Topic: 1.4 Applications - Averages

54) Jessica Hughes invested \$40 000 on January 1 in a partnership. She withdrew \$15 000 on June 1, withdrew a further \$2000 on August 1, and reinvested \$8 000 on November 1. What was her average monthly investment balance for the year?

54) \_\_\_\_\_

$$\begin{aligned}
 \text{Answer: January 1 - May 31:} & \quad 40000 \times 5 = 200000 \\
 \text{June 1 - July 31:} & \quad 25000 \times 2 = 50000 \\
 \text{August 1 - October 31:} & \quad 23000 \times 3 = 69000 \\
 \text{November 1 - December 31:} & \quad 31000 \times \frac{2}{12} = \underline{62000} \\
 \text{Total} & \quad 381000 \\
 \text{Average monthly investment} &= \frac{381000}{12} = \$31\,750.00
 \end{aligned}$$

Explanation:

ID: cbm12h 1-54

Topic: 1.4 Applications - Averages

- 55) Carla is paid a semi-monthly salary of \$1870.80. Her regular workweek is 40 hours. 55) \_\_\_\_\_  
 Overtime is paid at time and one-half regular pay.  
 a) What is Carla's hourly rate of pay?  
 b) What is Carla's gross pay if she worked 7 1/2 hours overtime in one pay period?

Answer: a) Annual salary =  $24 \times 1870.80 = 44899.20$   
 Weekly salary =  $44899.20 \div 52 = 863.45$   
 Hourly rate of pay =  $\frac{863.45}{40} = \$21.58625$

b) Regular semimonthly pay = 1870.80  
 Overtime pay =  $7.5 \times 21.58625 \times 1.5 = \underline{242.85}$   
 Gross earnings = \$2113.65

**Explanation:**

ID: cbm12h 1-55

Topic: 1.5 Applications - Payroll

- 56) Tom is employed at an annual salary of \$50 292.48. His regular workweek is 37.5 hours 56) \_\_\_\_\_  
 and he is paid semi-monthly.  
 a) What is Tom's gross pay per period?  
 b) What is his hourly rate of pay?  
 c) What is his gross pay for a period in which he worked 12 1/2 hours overtime at time a one-half regular pay?

Answer: a) Semimonthly pay =  $50292.48 \div 24 = 2095.52$   
 b) Weekly pay =  $50292.48 \div 52 = 967.16308$   
 Hourly rate =  $967.16308 \div 37.5 = 25.791015$   
 c) Regular earnings = 2095.52  
 Overtime pay =  $12.5 \times 25.791015 \times 1.5 = \underline{483.58}$   
 Gross earnings = \$2579.10

**Explanation:**

ID: cbm12h 1-56

Topic: 1.5 Applications - Payroll

- 57) Last week April worked 44 hours. She is paid \$11.20 per hour for a regular workweek of 57) \_\_\_\_\_  
 40 hours and overtime at time and one-half regular pay.  
 a) What were April's gross wages for last week?  
 b) What is the amount of the overtime premium?

Answer: a) Regular earnings =  $40 \times 11.20 = 448.00$   
 Overtime pay =  $4 \times 11.20 \times 1.5 = \underline{67.20}$   
 Gross earnings = \$515.20

b) Overtime premium =  $4 \times 11.20 \times 0.5 = \$22.40$

**Explanation:**

ID: cbm12h 1-57

Topic: 1.5 Applications - Payroll



- 58) Nick's gross earnings for one week was \$698.10. His regular rate of pay is \$15.60 for a 35 hour week and overtime is paid at time and one-half regular pay. Calculate the number of hours that Nick worked. 58) \_\_\_\_\_

Answer: Gross earnings = 698.10

$$\text{Regular earnings} = 35 \times 15.60 = 546.00$$

$$\text{Overtime pay} = 698.10 - 546.00 = 152.10$$

$$\text{Overtime hours} = \frac{152.10}{15.60 \times 1.5} = 6.5 \text{ hours}$$

$$\text{Total number of hours worked} = 35 + 6.5 = 41.5 \text{ hours}$$

Explanation:

ID: cbm12h 1-58

Topic: 1.5 Applications - Payroll

- 59) Mohammad is paid a weekly commission of 2% on net sales of \$6000.00, 4% on the next \$3000.00 and 6.25% on all further sales. His gross sales for a week were 11 160.00 and sales returns and allowances were \$120.00. 59) \_\_\_\_\_

a) Calculate his gross earnings for the week.

b) Calculate the average hourly rate of pay for the week if he worked 40 hours.

Answer: a) Net sales = Gross sales - Returns = 11 160 - 120 = 11 040

$$\text{Commission: } 2\% \text{ of } 6000 = 120.00$$

$$4\% \text{ of } 3000 = 120.00$$

$$6.25\% \text{ of } (11\ 040 - 9000) = 127.50$$

$$\text{Gross earnings} = 120.00 + 120.00 + 127.50 = \$367.50$$

$$\text{b) Average hourly rate} = 367.50 \div 40 = \$9.19$$

Explanation:

ID: cbm12h 1-59

Topic: 1.5 Applications - Payroll

- 60) September is paid on a weekly commission basis. She is paid a base salary of \$370.00 on a weekly quota of \$9500.00 and a commission of 5.75% on any sales in excess of the quota. 60) \_\_\_\_\_

a) If September's sales for last week were \$11 340.00, what were her gross earnings?

b) What are September's average hourly earnings if she worked 35 hours?

Answer: a) Base salary on quota of \$9500 = 370.00

$$\text{Commission} = 5.75\% \text{ on } 1840 = \underline{105.80}$$

$$\text{Gross earnings} = \underline{\$475.80}$$

$$\text{b) Hourly rate} = 475.80 \div 35 = \$13.59$$

Explanation:

ID: cbm12h 1-60

Topic: 1.5 Applications - Payroll

61) Bill earned a gross commission of \$2551.05 during August. What were his gross sales if his rate of commission is 14.5% of net sales and sales returns and allowances for the month were 6% of his sales? 61) \_\_\_\_\_

Answer: Net sales =  $2551.05 \div 0.145 = 17593.448$   
Net sales = Gross sales - returns  
 $17593.448 = \text{Gross sales} - 6\% \text{ of Gross sales}$   
 $17593.448 = 94\% \text{ of Gross sales}$   
Gross sales =  $\frac{17593.48}{.94} = \$18\,716.43$

Explanation:

ID: cbm12h 1-61

Topic: 1.5 Applications - Payroll

62) Yanping receives a monthly salary of \$1931.54 paid semi-monthly. The regular workweek is 38 hours. 62) \_\_\_\_\_

- a) Calculate the hourly rate of pay.
- b) If the gross earnings for one pay period is 1270.75, for how many hours of overtime w Yanping paid at double-time regular pay.

Answer: a) Annual gross earnings =  $1931.54 \times 12 = 23\,178.48$   
Weekly gross earnings =  $\frac{23178.48}{52} = 445.74$   
Hourly rate of pay =  $\frac{445.74}{38} = \$11.73$   
b) Regular semi-monthly gross earnings =  $\frac{1931.54}{2} = 965.77$   
Overtime pay =  $1270.75 - 965.77 = 304.98$   
Overtime rate =  $11.73 \times 2 = 23.46$   
Overtime hours =  $\frac{304.98}{23.46} = 13 \text{ hours}$

Explanation:

ID: cbm12h 1-62

Topic: 1.5 Applications - Payroll

63) Norm Bates is paid a semi-monthly salary of \$792.50. Regular hours are 37 1/2 per week and overtime is paid at time and one-half regular pay. 63) \_\_\_\_\_

- a) What is Norm's hourly rate of pay?  
 b) How many hours overtime did Norm work in a pay period for which his gross pay was \$946.30?

Answer:

- a) Annual salary =  $792.50 \times 24 = 19020.00$   
 Weekly pay =  $19020.00 \div 52 = 365.76923$   
 Hourly rate of pay =  $365.76923 \div 37.5 = \$9.75$   
 b) Gross earnings = 946.30  
 Regular earnings = 792.50  
 Overtime pay = 153.80  
 Overtime hourly rate =  $9.75 \times 1.5 = 14.625$   
 Overtime hours =  $153.80 \div 14.625 = 10.516$  hr.

Explanation:

ID: cbm12h 1-63

Topic: 1.5 Applications - Payroll

64) Mark's gross wages for a week were \$711.20. His regular workweek is 40 hours and overtime is paid at time and one-half regular pay. What is Mark's regular hourly wage if he worked 45 1/2 hours? 64) \_\_\_\_\_

- Answer: Total hours = 45.5  
 Regular hours = 40.00  
 Overtime hours = 5.5  
 5.5 overtime hours are equivalent to  $5.5 \times 1.5 = 8.25$  regular hours.  
 Hourly rate of pay =  $\frac{711.20}{48.25} = \$14.74$

Explanation:

ID: cbm12h 1-64

Topic: 1.5 Applications - Payroll

65) Shaggy's Grocery Store shows sales revenue (exclusive of GST) of \$235 000 for the year. Shaggy's GST taxable expenses were (exclusive of GST) \$24 750. How much should he remit to the government at the end of the year? 65) \_\_\_\_\_

- Answer: GST collected = 5% of \$235000 =  $0.05(235000) = 11750.00$   
 GST paid = 5% of \$24750 =  $0.05(24750) = \underline{-1237.50}$   
 GST remittance = \$10512.50

Explanation:

ID: cbm12h 1-65

Topic: 1.6 Applications - Taxes

- 66) A store located in Penticton, B.C., sells a computer for \$2975.00 plus HST. If the same model is sold at the same price in a store in Thunder Bay, Ontario, what is the difference in the prices paid by consumers in the two stores?

66) \_\_\_\_\_

Answer: Amount paid in Penticton, BC

$$= \text{Retail Price} + 12\% \text{ HST}$$

$$= 2975(1.12)$$

$$= \$3332.00$$

Amount paid in Thunder Bay, ON

$$= \text{Retail price} + 13\% \text{ HST}$$

$$= 2975(1.13)$$

$$= \$3361.75$$

The difference =  $3361.75 - 3332 = \$29.75$ , that is the 1% difference in the HST.

Explanation:

ID: cbm12h 1-66

Topic: 1.6 Applications - Taxes

- 67) A computer store located in Oakville, Ont., sells a laptop for \$1000.00 plus HST. If the same model is sold at the same price in a store in Victoria, B.C., what is the difference in the prices paid by consumers in the two stores?

67) \_\_\_\_\_

Answer: Amount paid in Oakville, Ont

$$= \text{Retail Price} + 13\% \text{ HST}$$

$$= 1000(1.13)$$

$$= \$1130$$

Amount paid in Victoria, B.C.

$$= \text{Retail price} + 12\% \text{ HST}$$

$$= 1000 (1.12)$$

$$= \$1120$$

The difference =  $1130 - 1120 = \$10.00$ , that is the 1% difference in the HST

Explanation:

ID: cbm12h 1-67

Topic: 1.6 Applications - Taxes

- 68) Two people living in different communities build houses of the same design on lots of equal size. If the person in Airdrie has his house and lot assessed at \$165 000 with a mill rate of 22.051 mills, will his taxes be more or less than the person in Kimberly with an assessment of \$145 000 and a mill rate of 25.124 mills?

68) \_\_\_\_\_

$$\text{Answer: Property tax in Airdrie} = 165000 \left[ \frac{22.051}{1000} \right] = 3638.42$$

$$\text{Property tax in Kimberly} = 145000 \left[ \frac{25.124}{1000} \right] = 3642.98$$

The person in Kimberly pays \$4.56 more in property tax.

Explanation:

ID: cbm12h 1-68

Topic: 1.6 Applications - Taxes

69) Extend each of the following and determine the total.

69) \_\_\_\_\_

Quantity	Unit Price
74	\$1.35
90	$16\frac{1}{3}$
70	\$0.885
58	\$1.35

$$\begin{aligned}\text{Answer: } 74 \times 1.35 &= 99.90 \\ 90 \times 0.16\frac{1}{3} &= 14.70 \\ 70 \times .885 &= 61.95 \\ 58 \times 1.35 &= \underline{78.30} \\ \text{Total} &= \$254.85\end{aligned}$$

Explanation:

ID: cbm12h 1-69

Topic: 1.4 Applications - Averages

70) Spade Realty sold lots for \$17 120 per hectare. What is the total sales value if the lot sizes, in hectares, were  $5\frac{3}{4}$ ,  $7\frac{1}{3}$ ,  $5\frac{5}{8}$ , and  $4\frac{1}{6}$ ?

70) \_\_\_\_\_

$$\begin{aligned}\text{Answer: Total size} &= \left[5\frac{3}{4} + 7\frac{1}{3} + 5\frac{5}{8} + 4\frac{1}{6}\right] \text{ ha} \\ &= (5.75 + 7.3333333 + 5.625 + 4.1666667) \text{ ha} \\ &= 22.875 \text{ ha} \\ \text{Sales value} &= 17120 \times 22.875 = \$391620.00\end{aligned}$$

Explanation:

ID: cbm12h 1-70

Topic: 1.4 Applications - Averages

71) Heart of Gold Realty sold lots for \$50 000 per hectare. What is the total sales value if the lot sizes, in hectares, were  $1\frac{3}{4}$ ,  $2\frac{1}{3}$ ,  $3\frac{5}{8}$ , and  $4\frac{1}{6}$ ?

71) \_\_\_\_\_

$$\begin{aligned}\text{Answer: Total size} &= \left[1\frac{3}{4} + 2\frac{1}{3} + 3\frac{5}{8} + 4\frac{1}{6}\right] \text{ ha} \\ &= (1.75 + 2.3333333 + 3.625 + 4.1666667) \text{ ha} \\ &= 11.875 \text{ ha} \\ \text{Sales value} &= 50000 \times 11.875 = \$593 750.00\end{aligned}$$

Explanation:

ID: cbm12h 1-71

Topic: 1.4 Applications - Averages

72) A salesperson earned a commission of \$926.59 for last week on gross sales of \$7880. If returns and allowances were 10.5% of gross sales, what is his rate of commission based on net sales?

72) \_\_\_\_\_

$$\begin{aligned}\text{Answer: Net sales} &= 0.895 \times 7880.00 = 7052.60 \\ \text{Commission rate} &= \frac{926.59}{7052.60} = 13.14\%\end{aligned}$$

Explanation:

ID: cbm12h 1-72

Topic: 1.5 Applications - Payroll

73) Levi earns \$19.60 an hour with time and one-half for hours worked over 8 a day. His hours for a week are 9.25, 8.5, 10.5, 13.5, and 6.25. Determine his gross earnings for a week.

73) \_\_\_\_\_

Answer: Total hours =  $9.25 + 8.5 + 10.5 + 13.5 + 6.25 = 48$   
Regular hours =  $8 + 8 + 8 + 8 + 6.25 = 38.25$   
Overtime hours =  $1.25 + 0.5 + 2.5 + 5.5 = 9.75$   
Regular pay =  $38.25 \times 19.60 = 749.70$   
Overtime pay =  $9.75 \times 19.60 \times 1.5 = \underline{286.65}$   
Gross pay =  $749.70 + 286.65 = \$1036.35$

Explanation:

ID: cbm12h 1-73

Topic: 1.5 Applications - Payroll

74) A salesperson receives a weekly base salary of \$800.00 on a quota of \$2900. On the next \$2100, she receives a commission of 14%. On any additional sales, the commission rate is 19%. Find her gross earnings for a week in which her sales total \$8455.

74) \_\_\_\_\_

Answer: Base salary on first \$2900 = \$800.00  
Commission on next \$2100 =  $0.14 \times 2100 = 294.00$   
Commission on additional sales =  $(8455 - 5000) \times 0.19 = 3455 \times .19 = \underline{656.45}$   
Gross earnings =  $800.00 + 294.00 + 656.45 = \$1750.45$

Explanation:

ID: cbm12h 1-74

Topic: 1.5 Applications - Payroll

75) A clothing salesperson receives a weekly base salary of \$200.00 on a quota of \$3 000. On the next \$1000, he receives a commission of 25%. On any additional sales, the commission rate is 40%. Find her gross earnings for a week in which her sales total \$6000.

75) \_\_\_\_\_

Answer: Base salary on first \$3000 = \$200.00  
Commission on next \$1000 =  $0.25 \times 1000 = 250.00$   
Commission on additional sales =  $(6000 - 4000) \times 0.40 = 2000 \times .40 = \underline{800.00}$   
Gross earnings =  $200.00 + 250.00 + 800.00 = \$1250.00$

Explanation:

ID: cbm12h 1-75

Topic: 1.5 Applications - Payroll

76) Esther's flower shop had sales revenue of \$152 000.00 for the year. If the shop's GST taxable expenses were 29 920.00. Calculate how much Colleen should remit to the government at the end of the year.

76) \_\_\_\_\_

Answer: GST collected =  $(0.05)152\ 000 = \$7\ 600$   
GST paid =  $(0.05)29\ 920 = \$1\ 496$   
GST remittance =  $7600 - 1496 = \$6104$

Explanation:

ID: cbm12h 1-76

Topic: 1.6 Applications - Taxes

77) Alicia Helm of Wawanesa, Manitoba, bought a ring for \$5700. Since the jeweller is shipping the ring, Alicia must pay a shipping charge of \$30.00. She must also pay PST and GST on the ring. Find the total purchase price of Alicia's ring.

77) \_\_\_\_\_

Answer:

Total value			\$5730.00
GST	5% of \$5730.00	\$286.50	
Manitoba PST	7% of 5730.00	401.10	<u>687.60</u>
Total purchase price			\$6417.60

Explanation:

ID: cbm12h 1-77

Topic: 1.6 Applications - Taxes

78) Suppose you went shopping and bought bulk laundry detergent worth \$11.65. You then received a \$1.50 trade discount, and had to pay a \$2.10 shipping charge. Find the total purchase price of the detergent in Nova Scotia.

78) \_\_\_\_\_

Answer:

Purchase price			\$11.65
Less discount		<u>1.50</u>	
Net price			10.15
Add shipping charge		<u>2.10</u>	
Total cost before taxes			12.25
HST 15% of \$12.25	1.8375	1.84	
Total cost in Nova Scotia			\$14.09

Explanation:

ID: cbm12h 1-78

Topic: 1.6 Applications - Taxes

79) A town has a total residential assessment of 900 million dollars. The town must meet expenditures of \$45 million.

79) \_\_\_\_\_

- a) If 90% of the expenditures are charged against residential real estate, calculate then total property taxes that must be raised.
- b) Calculate the mill rate.
- c) Calculate the property tax on a property assessed at \$235 000.00

Answer: a) Total Residential property tax =  $0.9(45\ 000\ 000) = \$40\ 500\ 000$

b) Mill rate =  $\frac{40500000}{900000000}(1000) = 45$

c) Property tax =  $235000 \frac{45}{1000} = \$10\ 575.00$

Explanation:

ID: cbm12h 1-79

Topic: 1.6 Applications - Taxes

- 80) A small town has a total residential assessment of \$1.1 billion. The town must meet expenditures of \$300 million. 80) \_\_\_\_\_
- a) If 80% of the expenditures are charged against residential real estate, calculate then total property taxes that must be raised.
- b) Calculate the mill rate.
- c) Calculate the property tax on a property assessed at \$500 000.00

Answer:

- a) Total Residential property tax =  $0.8(300\,000\,000) = \$240\,000\,000$
- b) Mill rate =  $\frac{240000000}{1100000000}(1000) = 218.18$
- c) Property tax =  $500000 \left[ \frac{218.18}{1000} \right] = \$109\,090$

Explanation:

ID: cbm12h 1-80

Topic: 1.6 Applications - Taxes

**MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.**

- 81) Simplify:  $6 + \frac{28 - 6 \times 4}{2} - 4$  81) \_\_\_\_\_
- A) 46                      B) 8                      C) 24                      D) 4                      E) 18

Answer: D

Explanation: A)  
B)  
C)  
D)  
E)

ID: cbm12h 1-81

Topic: 1.1 Basics of Arithmetic

- 82) Simplify:  $10 + \frac{40 - 10 \times 4}{2} - 5$  82) \_\_\_\_\_
- A) 5                      B) 2                      C) 55                      D) 8                      E) 7.5

Answer: A

Explanation: A)  
B)  
C)  
D)  
E)

ID: cbm12h 1-82

Topic: 1.1 Basics of Arithmetic



83) Calculate the final answer for the following expression: 83) \_\_\_\_\_  
 $(5^3 + 2^2) \div 20$   
A) 6.45                      B) 5.45                      C) 4.45                      D) 9.45                      E) 7.45

Answer: A  
Explanation: A)  
                  B)  
                  C)  
                  D)  
                  E)

ID: cbm12h 1-83  
Topic: 1.1 Basics of Arithmetic

84) Simplify the following: 84) \_\_\_\_\_  
 $7125 \times \left[ 4 - \frac{425}{775} \right]$   
A) 25592.74                      B) 27592.74                      C) 23592.74                      D) 26592.74                      E) 24592.74

Answer: E  
Explanation: A)  
                  B)  
                  C)  
                  D)  
                  E)

ID: cbm12h 1-84  
Topic: 1.1 Basics of Arithmetic

85) Calculate the weighted-average cost of the following inventory purchases: 85) \_\_\_\_\_

Date	Quantity Purchased	Cost per Unit	Total Amount
May 4	33	\$12.25	
May 11	41	\$13.87	
May 29	37	\$11.99	

A) \$22.22                      B) \$22.11                      C) \$21.21                      D) \$12.76                      E) \$12.12

Answer: D  
Explanation: A)  
                  B)  
                  C)  
                  D)  
                  E)

ID: cbm12h 1-85  
Topic: 1.4 Applications - Averages

86) You are paid a commission on the gross profit per vehicle that you sell. The commission increases with each additional vehicle that you sell. The minimum commission is 25% and it increases in increments of 1% for each additional vehicle sold. Your sales for the following month were as follows: 86) \_\_\_\_\_

<u>Vehicle</u>	<u>Gross Profit</u>
1	\$755
2	\$1023
3	\$474
4	\$1512
5	\$864
6	\$1021
7	\$1953
8	\$1207

What is your monthly gross pay?

- A) \$2462.69      B) \$2554.60      C) \$2669.69      D) \$2642.69      E) \$2569.42

Answer: B

Explanation: A)  
B)  
C)  
D)  
E)

ID: cbm12h 1-86

Topic: 1.5 Applications - Payroll

87) Your full-time job pays you a bi-weekly salary of \$2963.56. In addition to this position you have been working part-time for the last 15 months and earn \$500 semi-monthly. You have other payments that total \$14 400 per year. What is the maximum monthly amount that your payments can be towards a house purchase? Assume that property taxes and heating costs are included in the \$14 400. 87) \_\_\_\_\_

- A) \$2844.42  
B) \$1961.42  
C) \$3488.42  
D) \$2488.42  
E) none of the above

Answer: D

Explanation: A)  
B)  
C)  
D)  
E)

ID: cbm12h 1-87

Topic: 1.5 Applications - Payroll

88) You are supposed to teach  $15\frac{2}{3}$  credit hours per week per term for a trimester school year. 88) \_\_\_\_\_

Anything above is considered to be overtime and is compensated at time and one-half your regular rate of \$27.13 per hour. You work the following credit hours. How much total overtime, for the entire term, does your employer owe you at the end of the third term (assume that you were not paid any overtime in terms one and two and that the term is 15 weeks long)?

Term	Credit Hours
1	20
2	26
3	19

- A) \$11 187.50
- B) \$8987.5
- C) \$10 987.50
- D) \$11 987.50
- E) \$9987.50

Answer: C

Explanation: A)  
B)  
C)  
D)  
E)

ID: cbm12h 1-88

Topic: 1.5 Applications - Payroll

89) Your gross annual pay is \$19 163. Employment insurance premiums are deducted at a rate of 2.25% and Canada Pension Plan premiums are 3.75% based on total earnings. You pay income taxes at a rate of 17% on all amounts over \$8131. What is your Net Pay for the year? 89) \_\_\_\_\_

- A) \$16 137.78
- B) \$15 137.78
- C) \$17 137.78
- D) \$18 237.78
- E) \$16 317.78

Answer: A

Explanation: A)  
B)  
C)  
D)  
E)

ID: cbm12h 1-89

Topic: 1.5 Applications - Payroll

90) Calculate the final answer for the following expression:  $(10^3 + 20^2) \div 20$ . 90) \_\_\_\_\_  
A) 70.00      B) 3.5      C) 5000      D) 50.00      E) 20.00

Answer: A

Explanation: A)  
B)  
C)  
D)  
E)

ID: cbm12h 1-90

Topic: 1.1 Basics of Arithmetic

91) Calculate the weighted-average cost of the following inventory purchases: 91) \_\_\_\_\_

Date	Quantity Purchased	Cost per Unit	Total Amount
June 4	30	\$11.50	\$345.00
June 14	40	\$15.00	\$600.00
June 29	30	\$10.99	\$329.70

A) \$22.74      B) \$12.75      C) \$22.75      D) \$12.74      E) \$37.49

Answer: B

Explanation: A)  
B)  
C)  
D)  
E)

ID: cbm12h 1-91

Topic: 1.4 Applications - Averages

92) You bought a new car in Ontario for \$19 500 which included HST. What is the total amount of HST that you paid? 92) \_\_\_\_\_

A) \$2913.79      B) \$1197.37      C) \$171.05      D) \$2243.36      E) \$2535.00

Answer: D

Explanation: A)  
B)  
C)  
D)  
E)

ID: cbm12h 1-92

Topic: 1.6 Applications - Taxes

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

- 93) Phil works for a hydro company in a 35 hour work week schedule. His contract pays him \$1345/week for working Monday to Friday, 7 hours a day. If he spends more time than his usual time, he is entitled to "time and a half" on time worked in excess of 7 hours per day. If he works on Sundays or statutory holidays, he is entitled to twice the time. Calculate his gross earnings for the month of October 2013, if he worked for 5 hours on Thanksgiving Day in addition to his regular hours for the month. 93) \_\_\_\_\_

Answer: Rate per day =  $\frac{1345}{3} = \$269/\text{day}$

Rate per hour =  $\frac{1345}{35} = \$38.43/\text{hr}$

Total working days in October 2013 = 22 days

Pay for regular days =  $269 \times 22 = \$5918$

Pay for overtime =  $5 \times 2 \times 38.43 = \$384.29$

Gross earnings for October 2013 =  $\$5918 + \$384.29 = \$6302.29$

**Explanation:**

ID: cbm12h 1-93

Topic: 1.5 Applications - Payroll

- 94) Isabelle works for The Brick, a furniture company. She earns a base salary \$12/hr, 40 hours a week. However, she is also paid commission of 2% for all sales and an extra lump sum of \$1000 incentive if her monthly sales exceed \$10 000. In the month August, she won the title of employee of the month for total sales of \$75 000. How much did she earn in the month of August, assuming a 4 week month? 94) \_\_\_\_\_

Answer: Base salary =  $12 \times 40 \times 4 = \$1920$

Commission earned in August =  $2\% \times 75000 = \$1500$

Total pay for August =  $\$1920 + \$1500 + \$1000 = \$4420$

**Explanation:**

ID: cbm12h 1-94

Topic: 1.5 Applications - Payroll

- 95) Isabelle works for The Brick, a furniture company. She earns a base salary \$12/hr, 40 hours a week. However, she is also paid commission of 2% for all sales and \$1000 incentive pay for every sale of \$10 000. In the month August, she won the title of employee of the month for total sales of \$75 000. How much did she earn in the month of August, assuming a 4 weeks month? 95) \_\_\_\_\_

Answer: Base salary =  $12 \times 40 \times 4 = \$1920$

Commission earned in August =  $2\% \times 75000 = \$1500$

Total incentive pay =  $7 \times \$1000 = \$7000$

Total pay for August =  $\$1920 + \$1500 + \$7000 = \$10 420$

**Explanation:**

ID: cbm12h 1-95

Topic: 1.5 Applications - Payroll

**MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.**

- 96) Phil works for a hydro company in a 35 hour work week schedule. His contract pays him \$1345/week for working Monday to Friday, 7 hours a day. If he spends more time than his usual time, he is entitled to "time and a half" on time worked in excess of 7 hours per day. If he works on Sundays or statutory holidays, he is entitled to twice the time. Calculate his gross earnings for the month of November 2013, if he worked straight time only. 96) \_\_\_\_\_
- A) \$11 298      B) \$5649      C) \$5380      D) \$4035      E) \$8473.50

Answer: B

Explanation: A)  
B)  
C)  
D)  
E)

ID: cbm12h 1-96

Topic: 1.5 Applications - Payroll

- 97) Raj works for Honda Pickering on commission based on each unit sold. He gets \$700 for every used car he sells and \$975 for every new car. He sold 8 used cars and 5 new cars in January 2020. What was his gross earning in January? 97) \_\_\_\_\_
- A) \$11,300      B) \$5600      C) \$10,475      D) \$4875

Answer: C

Explanation: A)  
B)  
C)  
D)

ID: cbm12h 1-97

Topic: 1.5 Applications - Payroll

- 98) Abu sells mutual funds for CIBC. On mutual funds sales, CIBC charges a "front-end load" or gross commission rate of 5%. Abu is paid on a graduated commission structure. He receives 30% commission on the first \$50 000 worth of mutual funds he sells in a month, 40% commission for the next \$50 000 worth of mutual funds, and 75% commission on all additional sales in the same month. What is Abu's commission for a month in which he sells \$150 000 worth of mutual funds? 98) \_\_\_\_\_
- A) \$4500      B) \$2250      C) \$5625      D) \$2700      E) \$3625

Answer: E

Explanation: A)  
B)  
C)  
D)  
E)

ID: cbm12h 1-98

Topic: 1.5 Applications - Payroll

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

- 99) On March 1, Sam invested \$90 000 in a business. On June 1, he invested another \$10 000. On July 1, he withdrew \$17 000 to spend on the repair of his house. On September 1, he injected another \$2000 into the business. What was his average investment per month in the business during the year? Assume all months have the same length or weighting. 99) \_\_\_\_\_

Answer: \$0 are invested for 2 months

\$90,000 are invested for 3 months

\$90000 + \$10000 = \$100,000 are invested for 1 month

\$100,000 - \$17000 = \$83000 are invested for 2 months

\$83000 + \$2000 = \$85000 are invested for 4 months

$$\text{Average investment} = \frac{0 \times 2 + 90000 \times 3 + 100000 \times 1 + 83000 \times 2 + 85000 \times 4}{12}$$

$$= \frac{876000}{12} = \$73\,000 \text{ per month}$$

Explanation:

ID: cbm12h 1-99

Topic: 1.4 Applications - Averages

**MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.**

- 100) The engineering department of a consulting company has 8 junior engineers working at \$24.75/hour, 5 senior engineers working at \$39.49/hour, and an engineering manager working at \$47.24 per hour. Calculate the weighted average hourly rate earned by the engineering department. 100) \_\_\_\_\_
- A) \$37.16      B) \$34.05      C) \$88.19      D) \$35.09      E) \$31.62

Answer: E

Explanation: A)  
B)  
C)  
D)  
E)

ID: cbm12h 1-100

Topic: 1.4 Applications - Averages

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

- 101) In 2011, Danny invested his savings among four mutual funds as follows: 25% in bonds fund, 20% in Canadian equity fund, 40% in US equity fund, and the rest in money markets. During the past year, the rates of return on the individual funds were 7%, 3%, 9%, and -1%, respectively. What was the overall return rate on his portfolio? 101) \_\_\_\_\_

**Answer:** Contributing rate of return from bonds fund =  $25\% \times 7\% = 1.75\%$   
 Contributing rate of return from Canadian equity fund =  $20\% \times 3\% = 0.6\%$   
 Contributing rate of return from US equity fund =  $40\% \times 9\% = 3.6\%$   
 Contributing rate of return from money market =  $(100\% - 25\% - 20\% - 40\%) \times (-1\%)$   
 $= 15\% \times (-1\%) = -0.15\%$   
 Overall return rate on portfolio =  $1.75\% + 0.6\% + 3.6\% - 0.15\% = 5.8\%$

**Explanation:**

**ID:** cbm12h 1-101

**Topic:** 1.4 Applications - Averages

- 102) In the first term, Sam's courses and grades were as follows: 102) \_\_\_\_\_

Course	Credit	Grade Point Value
English	2	2.7
French	2	3.0
Math	3	4.0
Physics	3	4.0
Chemistry	3	3.7
Social Science	1	3.3
Arts	1	2.0

Calculate Sam's Grade Point Average (GPA).

**Answer:**

Course	Credits	GPV	Credits × GPV
English	2	2.7	5.4
French	2	3.0	6.0
Math	3	4.0	12.0
Physics	3	4.0	12.0
Chemistry	3	3.7	11.1
Social Science	1	3.3	3.3
Arts	1	2.0	2.0
Total	15		51.8

$$\text{Grade Point Average} = \frac{51.8}{15} = 3.45$$

**Explanation:**

**ID:** cbm12h 1-102

**Topic:** 1.4 Applications - Averages



**MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.**

- 103) Kim invested \$7500 in a business for 3 months. She withdrew \$2500 at the start of the fourth month and kept the rest of the money in the savings account for the remaining 9 months in the year. What is Kim's average monthly investment balance for the year? 103) \_\_\_\_\_
- A) \$5000      B) \$833      C) \$3750      D) \$5625      E) \$1042

Answer: D

Explanation: A)  
B)  
C)  
D)  
E)

ID: cbm12h 1-103

Topic: 1.4 Applications - Averages

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

- 104) Certify Auto Repair (CAR) files GST returns annually. In 2012, CAR billed its customers \$195 432 for labour, \$24 732 for parts, and then added the GST. During this year, CAR paid \$19 785 for parts, \$36 000 for rent, \$9767 for utilities, and \$21 873 for shop repairs, plus the GST on these goods and services. What GST must be remitted (or refunded by the CRA ) for the year 2012? 104) \_\_\_\_\_

Answer: Total Revenue =  $195432 + 24732 = \$220\,164$   
Total Costs =  $19785 + 36000 + 9767 + 21873 = \$87\,425$   
Net Revenue =  $220164 - 87425 = \$132\,739$   
GST remitted = \$6636.95

Explanation:

ID: cbm12h 1-104

Topic: 1.6 Applications - Taxes

- 105) Samir plans to sell his 2400 sq. ft. bungalow in Whitby for \$389 000 and buy a similar-sized house in Oshawa for \$369 000. Whitby charges the property tax at the mill rate of 13.59815, whereas Oshawa charges the property tax at the mill rate of 16.18347. What will be his net property tax penalty/saving? 105) \_\_\_\_\_

Answer: Property Tax in Whitby =  $\frac{13.59815}{1000} \times 389000 = \$5289.68$   
Property Tax in Oshawa =  $\frac{16.18347}{1000} \times 369000 = \$5971.70$   
Net property tax penalty = \$682.02

Explanation:

ID: cbm12h 1-105

Topic: 1.6 Applications - Taxes

**MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.**

- 106) Justin is planning to buy a house. He has two options. A 1800 sq. ft. bungalow in Courtice costs \$389 000. A similar house costs \$369 000 in Bowmanville. Justin plans to base his decision on the cost of property tax paid. Whitby charges the property tax at the mill rate of 13.59815, whereas Oshawa charges the property tax at the mill rate of 16.18347. Where will he end up paying less taxes? 106) \_\_\_\_\_
- A) In Courtice
  - B) Taxes are the same in both the cities
  - C) In Bowmanville
  - D) There is not enough data to make a decision

Answer: A

Explanation: A)  
B)  
C)  
D)

ID: cbm12h 1-106

Topic: 1.6 Applications - Taxes

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

- 107) Paul is a homeowner in Whitby and his home value has been recently assessed by MPAC at \$339 500. Paul's tax notice lists the following mill rates for various local services and capital developments. Calculate current year's total property tax. 107) \_\_\_\_\_

Town general municipal	4.19938
Region subtotal	7.18877
Education	2.21000

Answer: Total property tax rate = 4.19938 + 7.18877 + 2.21 = 13.59815

$$\text{Total property tax} = \frac{13.59815}{1000} \times 339500 = \$4616.57$$

Explanation:

ID: cbm12h 1-107

Topic: 1.6 Applications - Taxes

**MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.**

108) Simplify:  $\frac{\sqrt{5^2 + 6^2 + 7^2}}{5 + 6 + 7}$  108) \_\_\_\_\_

- A) 1                      B) 10.49                      C) 0.58                      D) 0.24                      E) 6.11

Answer: C

Explanation: A)  
B)  
C)  
D)  
E)

ID: cbm12h 1-108  
Topic: 1.2 Fractions

109) Simplify:  $\frac{-3 + \sqrt{3^2 - 4 \times 1 \times 2}}{2 \times 1}$  109) \_\_\_\_\_

- A) -1                      B) 0                      C) -1.5                      D) 1.5                      E) 1

Answer: A

Explanation: A)  
B)  
C)  
D)  
E)

ID: cbm12h 1-109  
Topic: 1.2 Fractions

110) Simplify:  $\frac{\$636}{0.09 + \frac{301}{365}}$  110) \_\_\_\_\_

- A) \$765                      B) \$7067                      C) \$771                      D) \$665                      E) \$695

Answer: E

Explanation: A)  
B)  
C)  
D)  
E)

ID: cbm12h 1-110  
Topic: 1.2 Fractions

111) Simplify:  $5\frac{3}{4} + 7\frac{5}{8} - 9\frac{1}{2}$  111) \_\_\_\_\_  
A)  $22\frac{7}{8}$       B)  $3\frac{7}{8}$       C)  $3\frac{7}{16}$       D)  $3\frac{1}{8}$       E)  $3\frac{1}{16}$

Answer: B

Explanation: A)  
B)  
C)  
D)  
E)

ID: cbm12h 1-111  
Topic: 1.2 Fractions

112) Simplify and round the answer to two decimal places:  $56.929 - 36.434$  112) \_\_\_\_\_  
A) 20.54      B) 20.50      C) 20.48      D) 20.53      E) 20.49

Answer: B

Explanation: A)  
B)  
C)  
D)  
E)

ID: cbm12h 1-112  
Topic: 1.1 Basics of Arithmetic

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

113) Change 0.25% into a decimal. 113) \_\_\_\_\_

Answer:  $0.25/100 = 0.0025$

Explanation:

ID: cbm12h 1-113  
Topic: 1.3 Percent

114) Change 0.035 into a percent. 114) \_\_\_\_\_

Answer:  $0.035 * 100 = 3.5\%$

Explanation:

ID: cbm12h 1-114  
Topic: 1.3 Percent

**MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.**

115) Change 0.2% into a fraction.

- A)  $\frac{1}{2}$       B)  $\frac{1}{5}$       C)  $\frac{1}{50}$       D)  $\frac{1}{12}$       E)  $\frac{1}{500}$

115) \_\_\_\_\_

Answer: E

Explanation: A)  
B)  
C)  
D)  
E)

ID: cbm12h 1-115

Topic: 1.3 Percent

116) Express the following as a percentage:

$$\frac{15}{84}$$

- A) .1667%      B) 1.667%      C) .001667%      D) 16.67%      E) 166.67%

116) \_\_\_\_\_

Answer: D

Explanation: A)  
B)  
C)  
D)  
E)

ID: cbm12h 1-116

Topic: 1.3 Percent

117) Change the following expression into a decimal: 166.67%

- A) 0.16667      B) 166.7      C) 16667      D) 166667      E) 1.6667

117) \_\_\_\_\_

Answer: E

Explanation: A)  
B)  
C)  
D)  
E)

ID: cbm12h 1-117

Topic: 1.3 Percent

118)  $87\frac{1}{2}\%$  is equal to:

118) \_\_\_\_\_

A)  $\frac{87.5}{100}\%$

B)  $\frac{5}{8}$

C) 8.75

D)  $\frac{7}{8}$

E)  $87\frac{1}{200}$

Answer: D

Explanation: A)

B)

C)

D)

E)

ID: cbm12h 1-118

Topic: 1.3 Percent

119) Convert 99.5% into decimals.

119) \_\_\_\_\_

A) 0.99

B) 9.95

C) 0.9

D) 0.995

E) 0.999

Answer: D

Explanation: A)

B)

C)

D)

E)

ID: cbm12h 1-119

Topic: 1.3 Percent

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

120) Simplify:  $2[4^2 - 3 \times 12 + 4(7 - 9 \times 50)] + (6 + 9^4)$

120) \_\_\_\_\_

$$\begin{aligned} \text{Answer: } &= 2[4^2 - 3 \times 12 + 4(7 - 9 \times 50)] + (6 + 9^4) \\ &= 2[16 - 3 \times 12 + 4(7 - 9 \times 50)] + 6 + 9^4 \\ &= 2[16 - 36 + 4(-443)] + 6 + 9^4 \\ &= 2[16 - 36 - 1772] + 6 + 9^4 \\ &= 2[-1792] + 6 + 9^4 \\ &= -3584 + 6 + 9^4 \\ &= -3584 + 6 + 6561 \\ &= -3578 + 6561 \\ &= 2983 \end{aligned}$$

Explanation:

ID: cbm12h 1-120

Topic: 1.1 Basics of Arithmetic

121) Simplify:  $44[(9 \div 3) + 72 - 6 \times 2.5 - 19] - [42 - 3(77 \div (3.5 \times 2)) - 9]$  121) \_\_\_\_\_

$$\begin{aligned}\text{Answer:} &= 44[3 + 72 - 15 - 19] - [42 - 3(77 \div 7) - 9] \\ &= 44[60 - 19] - [42 - 3(11) - 9] \\ &= 44(41) - [42 - 33 - 9] \\ &= 44(41) - [9 - 9] \\ &= 1804 - 0 \\ &= 1804\end{aligned}$$

**Explanation:**

**ID:** cbm12h 1-121

**Topic:** 1.1 Basics of Arithmetic

122) Simplify, then round to the nearest hundredth:  $\frac{2540}{2 - 0.44 + \frac{671}{1342}}$  122) \_\_\_\_\_

$$\begin{aligned}\text{Answer:} &= \frac{2540}{1.56 + \frac{671}{1342}} \\ &= \frac{2540}{1.56 + \frac{1}{2}} \\ &= \frac{2540}{1.56 + 0.5} \\ &= \frac{2540}{2.06} \\ &= 1233.01\end{aligned}$$

**Explanation:**

**ID:** cbm12h 1-122

**Topic:** 1.2 Fractions

123) Convert this fraction into the decimal form. If appropriate, place a dot above a decimal number to show that it repeats:  $\frac{17}{12}$  123) \_\_\_\_\_

**Answer:** 1.416

**Explanation:**

**ID:** cbm12h 1-123

**Topic:** 1.2 Fractions

124) Convert this fraction into the decimal form. If appropriate, place a dot above a decimal number to show that it repeats:  $\frac{6}{20}$  124) \_\_\_\_\_

**Answer:** 0.333

**Explanation:**

**ID:** cbm12h 1-124

**Topic:** 1.2 Fractions

125) Reduce the following fraction to the lowest term:  $\frac{64}{104}$

125) \_\_\_\_\_

Answer:  $\frac{8}{13}$

Explanation:

ID: cbm12h 1-125

Topic: 1.2 Fractions

126) Change the following percent into a common fraction in lowest terms: 34%

126) \_\_\_\_\_

Answer:  $\frac{17}{50}$

Explanation:

ID: cbm12h 1-126

Topic: 1.3 Percent

127) Change the following percent into a common fraction in lowest terms: 82.6%

127) \_\_\_\_\_

Answer:  $\frac{413}{500}$

Explanation:

ID: cbm12h 1-127

Topic: 1.3 Percent

128) Express the following as a percent: 0.67

128) \_\_\_\_\_

Answer: 67%

Explanation:

ID: cbm12h 1-128

Topic: 1.3 Percent

129) Express the following as a percent: 4.55

129) \_\_\_\_\_

Answer: 455%

Explanation:

ID: cbm12h 1-129

Topic: 1.3 Percent

130) Express the following as a percent:  $\frac{7}{8}$

130) \_\_\_\_\_

Answer: 87.5%

Explanation:

ID: cbm12h 1-130

Topic: 1.3 Percent



131) A house in Detroit was sold at \$246,000, which is  $\frac{4}{13}$  of its actual value. If the realtor made a commission of \$1.25 on each \$250 of the actual house value, how much commission does the realtor earn while selling the house?

131) \_\_\_\_\_

Answer:  $\frac{1}{13}$  of the house's actual cost is  $\frac{4}{13}$  of the cost  $\div 4$ .

$$\$246\,000 \div 4 = \$61\,500.$$

$\frac{13}{13}$  of the cost or all the actual value of the house, is  $\frac{1}{13}$  of the cost  $\times 13$ .

$$\$61\,500 \times 13 = \$799\,500$$

$\frac{13}{13}$  of the house's price is \$799 500.

$$\$799\,500 \div \$250 = \$3198.$$

$$\$3198 \times \$1.25 = \$3997.50$$

The realtor earned \$3997.50.

Explanation:

ID: cbm12h 1-131

Topic: 1.4 Applications - Averages

132) A party room was rented out at \$11.75 per hour. If 6 people each rented the room for  $2\frac{3}{5}$ ,  $1\frac{17}{20}$ ,  $4\frac{5}{6}$ ,  $3\frac{3}{4}$ ,  $6\frac{1}{3}$ , and  $2\frac{7}{10}$  hours respectively, how much did the party room owners earn in total (excluding all taxes)? Round your answer to the nearest cent.

132) \_\_\_\_\_

Answer:  $= \frac{11.75}{1} \times \frac{13}{5} + \frac{11.75}{1} \times \frac{37}{20} + \frac{11.75}{1} \times \frac{29}{6} + \frac{11.75}{1} \times \frac{15}{12} + \frac{11.75}{1} \times \frac{19}{3} + \frac{11.75}{1} \times$

$$\frac{27}{10}$$

$$= \frac{152.75}{5} \times \frac{434.75}{20} \times \frac{340.75}{6} \times \frac{176.25}{12} \times \frac{223.25}{3} \times \frac{317.25}{10}$$

$$= 30.55 + 21.7375 + 56.7916 + 14.6875 + 74.4166 + 31.725$$

$$= 229.91$$

= The party room owners were paid \$229.91 in total.

Explanation:

ID: cbm12h 1-132

Topic: 1.4 Applications - Averages

133) Complete the following statement:

133) \_\_\_\_\_

Quantity	Description	Unit Price	Total \$
88	Alpha	\$0.37	
65	Bravo	$96\frac{4}{5}$ ¢	
73	Charlie	\$0.675	
46	Delta	\$1.44	

Answer:

Quantity	Description	Unit Price	Total \$
88	Alpha	\$0.37	32.56
65	Bravo	$96\frac{4}{5}$ ¢	62.92
73	Charlie	\$0.675	49.275
46	Delta	\$1.44	66.24

Explanation:

ID: cbm12h 1-133

Topic: 1.4 Applications - Averages

134) Oliver received a pay at the end of the month of \$4 303.00 in June 2016, working 6 hours a day, and a total of 20 days in the month. Included in the pay is a bonus of \$243. What is Oliver's hourly rate of pay? Round to the nearest cent. 134) \_\_\_\_\_

Answer:  $\$4\,303.00 - \$243 = \$4\,060.00$

$$\$4\,060 \div 20 = \$203$$

$$\$203 \div 6 = \$33.83$$

Oliver's hourly rate of pay is \$33.83

Explanation:

ID: cbm12h 1-134

Topic: 1.5 Applications - Payroll

135) An employee at a nuclear power plant in New York has an annual salary of \$143 000 and is paid every two weeks. The employee works twenty days in a month, five days in a week, and eight hours in a day. (Assume 52 weeks in a year) 135) \_\_\_\_\_

a) What is the gross pay per pay period?

b) What is the employee's hourly rate of pay?

Answer: a)  $52 \div 2 = 26$

He has 26 pay periods in a year.

$$\$143\,000 \div 26 = \$5500$$

The employee's gross pay per pay period is \$5500

b)  $\$5500 \div 10 = \$550$

$$\$550 \div 8 = \$68.75$$

The employee earns \$68.75 per hour.

Explanation:

ID: cbm12h 1-135

Topic: 1.5 Applications - Payroll

- 136) Determine the amount of provincial sales tax in Quebec after purchasing an electric key board for \$182. 136) \_\_\_\_\_  
 Answer:  $9.975\%$  of 182 =  $0.09975(182) = \$18.15$   
 Explanation:  
 ID: [cbm12h 1-136](#)  
 Topic: [1.6 Applications - Taxes](#)
- 137) While in Prince Edward Island, Charlotte goes to the barbershop, where she pays \$24 for the haircut and \$21 for the colour, both of which are subject to the 14% HST. She also tips the barber 17% of the combined cost of the haircut and colouring, excluding taxes. How much does Charlotte spend in total? 137) \_\_\_\_\_  
 Answer:  $24 + 21 = 45$  Tip =  $17\%$  of 45 =  $0.17(45) = \$7.65$  HST on the haircut =  $14\%$  of 24 =  $0.14(24) = \$3.36$  HST on the colouring =  $14\%$  of 21 =  $0.14(21) = \$2.94$  Total =  $45 + 7.65 + 3.36 + 2.94 = \$58.95$   
 Explanation:  
 ID: [cbm12h 1-137](#)  
 Topic: [1.6 Applications - Taxes](#)
- 138) The city of Toronto had a property tax rate of approximately 1.529% on multiresidential buildings in 2015. If a multiresidential building had an estimated value of \$ 12 500 000, how much property tax did the building's owners have to pay? 138) \_\_\_\_\_  
 Answer:  $0.01259(12500000) = 157375$   
 Explanation:  
 ID: [cbm12h 1-138](#)  
 Topic: [1.6 Applications - Taxes](#)
- 139) Evaluate:  $\frac{4 + 6(9-7)^2 + 2}{3 \times 5}$  139) \_\_\_\_\_  
 Answer:  $(4 + 6(2)^2 + 2)/15 = (4 + 6(4) + 2)/15 = (4 + 24 + 2)/15 = 30/15 = 2$   
 Explanation:  
 ID: [cbm12h 1-139](#)  
 Topic: [1.1 Basics of Arithmetic](#)
- 140) Simplify:  $6 \div 2 + 15 \times 2$  140) \_\_\_\_\_  
 Answer:  $3 + 30 = 33$   
 Explanation:  
 ID: [cbm12h 1-140](#)  
 Topic: [1.1 Basics of Arithmetic](#)
- 141) Turn  $78\frac{54}{132}\%$  into a common fraction in lowest terms. 141) \_\_\_\_\_  
 Answer:  $69/88$   
 Explanation:  
 ID: [cbm12h 1-141](#)  
 Topic: [1.3 Percent](#)

142) Express  $93/44$  as a percent. 142) \_\_\_\_\_

Answer: 211.36%

Explanation:

ID: cbm12h 1-142

Topic: 1.3 Percent

143) Compute 187% of 342. 143) \_\_\_\_\_

Answer: 639.54

Explanation:

ID: cbm12h 1-143

Topic: 1.3 Percent

144) Find the arithmetic average of the following data set: 2, 9,  $\frac{7}{8}$ , 34.02, 52, 1,  $83\frac{3}{4}$ , 0.5, 6,  $\frac{108}{22}$ . 144) \_\_\_\_\_

Answer:  $= (2 + 9 + 0.875 + 34.02 + 52 + 1 + 83.75 + 0.5 + 6 + 4.909)/10 = 19.405$

Explanation:

ID: cbm12h 1-144

Topic: 1.4 Applications - Averages

145) Pooja has an annual salary of \$98 351.00 and is paid biweekly. Her regular workweek is 32 hours. 145) \_\_\_\_\_

a) What is Pooja's gross pay per pay period?

b) What is the hourly rate of pay?

c) What are the gross overtime earnings for Pooja if the overtime rate is one and three quarters the regular hourly rate of pay and she works 8 extra hours?

Answer: a) Yearly salary = \$98 351.00  
Biweekly gross pay =  $98\ 351/26 = \$3782.73$

b) Biweekly gross pay = \$3782.73  
Weekly gross pay =  $3782.73/2 = \$1891.37$   
Hourly rate =  $1891.37/32 = \$59.11$

c) Hourly rate = \$59.11  
Gross overtime earnings =  $59.11(1.75)(8) = \$827.54$

Explanation:

ID: cbm12h 1-145

Topic: 1.5 Applications - Payroll

146) Danny receives a commission of 13.4% on the first \$5000 of his net sales, 14.1% on the next \$3000, and 15.0% on any additional net sales for the month, and is entitled to drawings of \$1750 per month. During February, Danny's gross sales amounted to \$11 456 and sales ret and allowances of \$512. 146) \_\_\_\_\_

- a) What is Danny's gross commission for the month?  
 b) If Danny drew \$1235 in February, what is the amount due to him?

Answer: a) 

Gross sales	= \$11 456.00	
Commission on first \$5000	= 0.134(5000)	= \$670.00
Commission on next \$3000	= 0.141(3000)	= \$423
Commission on additional sales	= 0.15(11456 - 8000)	= <u>\$518.40</u>
Total gross commission		= \$1611.40

b)  $1611.40 - 1235 = \$376.40$

Explanation:

ID: cbm12h 1-146

Topic: 1.5 Applications - Payroll

147) In 2018, Ashley's bike repair shop made a gross profit of \$23 000, of which \$4032 were GST-taxable expenses. How much did Ashley remit to the government in 2018? 147) \_\_\_\_\_

Answer: 

GST collected: 5% of \$23000	= 0.05(23000)	= \$1150.00
GST Paid: 5% of 4032	= 0.05(4032)	= <u>- \$201.60</u>
GST Remittance:		= \$948.40

Explanation:

ID: cbm12h 1-147

Topic: 1.6 Applications - Taxes

148) Suppose that in your Business Math course you receive the following grades (%):

148) \_\_\_\_\_

Assessment	Grade Received
Quiz 1	80%
Quiz 2	90%
Quiz 3	50%
Quiz 4	40%
Quiz 5	80%
Quiz 6	90%
Quiz 7	80%
Quiz 8	50%
Quiz 9	80%
Quiz 10	70%
Term Test 1	65%
Term Test 2	78%
Final Exam	72%

Each assessment category counts as following towards the final grade:

Assessments	Course Grade
Quizzes (best 8 out of 10)	20%
Tests (two; each 15%)	30%
Final Exam	50%

- a) What is your average quiz grade in this course?
- b) What is your average grade for the course overall?

Answer: a) Quiz Average =  $(80 + 90 + 80 + 90 + 80 + 50 + 80 + 70)/8 = 77.5\%$

b) Average course grade =  $[(77.5)20 + (65)15 + (78)15 + (72)50] / (20 + 15 + 15 + 50)$

$$= (1350 + 2145 + 3600)/100 = 70.95\%$$

**Explanation:**

ID: cbm12h 1-148

Topic: 1.4 Applications - Averages

## Answer Key

Testname: UNTITLED1

- 1)  $(28 - 4)/3 = 24/3 = 8$   
ID: cbm12h 1-1  
Page Ref: 5-6  
Topic: 1.1 Basics of Arithmetic
- 2)  $8 + 12 = 20$   
ID: cbm12h 1-2  
Page Ref: 5-6  
Topic: 1.1 Basics of Arithmetic
- 3)  $5 * 7 = 35$   
ID: cbm12h 1-3  
Page Ref: 5-6  
Topic: 1.1 Basics of Arithmetic
- 4)  $5/20 = .25$   
ID: cbm12h 1-4  
Page Ref: 5-6  
Topic: 1.1 Basics of Arithmetic
- 5)  $40/20 = 2$   
ID: cbm12h 1-5  
Page Ref: 5-6  
Topic: 1.1 Basics of Arithmetic
- 6)  $9 * 3 + 5 * 10 = 27 + 50 = 77$   
ID: cbm12h 1-6  
Page Ref: 5-6  
Topic: 1.1 Basics of Arithmetic
- 7)  $268/(4400 * .4262295) = 268/1875.4098 = .1429021$   
ID: cbm12h 1-7  
Page Ref: 5-6  
Topic: 1.1 Basics of Arithmetic
- 8)  $125 * (6 + 0.35 * 0.2094395) = 125 * (6 + 0.0733038) = 125 * (6.0733038) = 759.163$   
ID: cbm12h 1-8  
Page Ref: 5-6  
Topic: 1.1 Basics of Arithmetic
- 9)  $400 * (1 + .10 * .2739726) = 400 * (1 + .02739726) = 400 * (1.02739726) = 410.959$   
ID: cbm12h 1-9  
Page Ref: 5-6  
Topic: 1.1 Basics of Arithmetic
- 10)  $9210 * (5 - 1.38 * 0.40238095) = 9210 * (5 - 0.5552857) = 9210(4.444714) = 40,935.8$   
ID: cbm12h 1-10  
Page Ref: 5-6  
Topic: 1.1 Basics of Arithmetic
- 11)  $2424/(1 + .2 * .4547945) = 2424/(1 + .0909589) = 2424/1.0909589 = 2221.899$   
ID: cbm12h 1-11  
Page Ref: 6-11  
Topic: 1.2 Fractions
- 12)  $3140/(2 + 0.35 * 0.2123288) = 3140/(2 + 0.0743151) = 2910/2.074315068 = 1513.753$   
ID: cbm12h 1-12  
Page Ref: 7-13  
Topic: 1.2 Fractions

## Answer Key

Testname: UNTITLED1

13)  $5000/(1 + .1 * .5) = 5000/(1 + 0.05) = 5000/1.05 = 4761.90$

ID: cbm12h 1-13

Page Ref: 6-11

Topic: 1.2 Fractions

14)  $23240 * (\frac{1}{2} + 3\frac{1}{4} + 4\frac{1}{5})$

$= 23240 * (2 \frac{10}{20} + 3 \frac{5}{20} + 4 \frac{4}{20})$

$= 23240 * (9 \frac{19}{20}) = 23240 * 9.95$

$= \$231238$

ID: cbm12h 1-14

Page Ref: 6-11

Topic: 1.2 Fractions

15) Total Hours

$= 15\frac{1}{2} + 14\frac{3}{4} + 18\frac{1}{8}$

$= 15.5 + 14.75 + 18.125$

$= 48.375$

Total cost of labor =  $48.375 * 14.75 = \$713.53$

ID: cbm12h 1-15

Page Ref: 6-11

Topic: 1.2 Fractions

16) Total Hours

$= 11\frac{3}{4} + 14\frac{13}{20} + 22\frac{4}{5}$

$= 11.75 + 14.65 + 22.80$

$= 49.20$

Total cost of labor =  $49.20 * 18.00 = \$885.60$

ID: cbm12h 1-16

Page Ref: 7-13

Topic: 1.2 Fractions

17) Retail value =  $300(\$0.75) = \$225$

Credit =  $(1 - 1/3) * \$225 = (2/3) * \$225 = \$150$

ID: cbm12h 1-17

Page Ref: 16-21

Topic: 1.4 Applications - Averages

18)  $1161616161669 \times 0.85 = \$58.65$

$111 \times 0.16 \frac{2}{3} = 330 \times 0.1666667 = 18.50$

$155 \times 2.75 = 426.25$

$350 \times 1.66 = \underline{581.00}$

$\$1084.40$

ID: cbm12h 1-18

Page Ref: 16-21

Topic: 1.4 Applications - Averages



## Answer Key

Testname: UNTITLED1

19) Quantity	Unit Price	Value
48	\$2.45	\$117.60
48	0.83 1/8	39.90
16	2.12	33.92
60	1.33 1/6	<u>79.90</u>
Total:		\$271.32

ID: cbm12h 1-19

Page Ref: 16-21

Topic: 1.4 Applications - Averages

20) Number of items		Unit price		Weighted value
8	×	\$13.00	=	104.00
4	×	\$12.00	=	48.00
15	×	\$10.00	=	150.00
<u>10</u>	×	\$10.50	=	<u>105.00</u>
Total: 37				407.00

Average price was  $407/37 = \$11.00$

ID: cbm12h 1-20

Page Ref: 17-24

Topic: 1.4 Applications - Averages

21) Number of items		Unit price		Weighted value
5	×	\$5.00	=	25.00
10	×	8.00	=	80.00
8	×	6.00	=	48.00
<u>15</u>	×	3.00	=	<u>45.00</u>
Total: 38				198.00

Average price was  $198/38 = \$5.21$

ID: cbm12h 1-21

Page Ref: 16-21

Topic: 1.4 Applications - Averages

$$\begin{aligned} 22) &= 70(0.1) + 85(0.2) + 64(0.3) + 72(0.4) \\ &= 7 + 17 + 19.2 + 28.8 \\ &= 72 \end{aligned}$$

ID: cbm12h 1-22

Page Ref: 16-21

Topic: 1.4 Applications - Averages

## Answer Key

Testname: UNTITLED1

- 23) a)  $66 + 69 + 80 + 57 = 272$   
Average number of litres =  $272 \div 4 = 68$
- b) Average cost per litre:  
Total cost =  $66 \times 69.0 = 45.54$   
 $69 \times 70.5 = 48.645$   
 $80 \times 71.5 = 57.20$   
 $57 \times 74.5 = \underline{42.465}$   
193.85 cents  
Average cost =  $193.86 \div 272 = 71.27$  cents
- c) Average cost per km =  $71.27 \div 9.75 = 7.3097436$  cents

ID: cbm12h 1-23

Page Ref: 16-21

Topic: 1.4 Applications - Averages

- 24) Weighted investment:
- |                              |   |
|------------------------------|---|
| January 1 — March 31:        | $12500 \times 3/12 = 3125.0000$             |
| April 1 - July 31:           | $11650 \times 4/12 = 3883.3333$             |
| August 1 - August 31:        | $13570 \times 1/12 = 1130.8333$             |
| September 1 - December 31:   | $12870 \times 4/12 = \underline{4290.0000}$ |
| Average investment balance = | \$12429.17                                  |

ID: cbm12h 1-24

Page Ref: 17-24

Topic: 1.4 Applications - Averages

- 25) Weighted investment:
- |                              |   |
|------------------------------|---|
| January 1 - February 28:     | $10000 \times 2/12 = 1666.6700$             |
| March 1 - June 30:           | $9000 \times 4/12 = 3000.0000$              |
| August 1 - August 31:        | $14000 \times 3/12 = 3500.0000$             |
| September 1 - December 31:   | $10000 \times 3/12 = \underline{2500.0000}$ |
| Average investment balance = | \$10666.67                                  |

ID: cbm12h 1-25

Page Ref: 16-21

Topic: 1.4 Applications - Averages

- 26)
- | Date    | Balance | Months | Weighted value |               |
|---------|---------|--------|----------------|---------------|
| January | 1       | 7600   | 2              | 15 200        |
| March   | 1       | 7180   | 2              | 14 360        |
| May     | 1       | 8870   | 5              | 44 350        |
| October | 1       | 8740   | <u>3</u>       | <u>26 220</u> |
| Total:  |         |        | 12             | 100 130       |

Average monthly balance =  $100130/12 = \$8344.17$

ID: cbm12h 1-26

Page Ref: 17-24

Topic: 1.4 Applications - Averages

Answer Key

Testname: UNTITLED1

- 27) a) Semimonthly pay = \$1023.40  
Yearly salary = \$24 561.60  
Weekly gross pay =  $24561.60 \div 52 = \$472.34$   
Hourly rate =  $472.34 \div 40 = \$11.81$   
b) Gross pay = 1390.47  
Regular pay = - 1023.40  
Overtime pay = 367.07  
Number of overtime hours =  $(367.07 \div 1.5) \div 11.81 = 20.72$  hrs.

ID: cbm12h 1-27

Page Ref: 24-32

Topic: 1.5 Applications - Payroll

- 28) Total hours =  $10.5 + 7.5 + 11 + 13 + 9.75 = 51.75$   
Regular weekly earnings =  $36 \times \$11.70 = \$421.20$   
Overtime earnings =  $(51.75 - 36) \times \$11.70 \times 1.5 = \$276.41$   
Gross = Regular time + Overtime =  $\$421.20 + \$276.41 = \$697.61$

ID: cbm12h 1-28

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

- 29) Gross sales = \$14660.00  
Less: returns = 331.20  
Net sales = 14328.80  
Gross commission =  $14328.80 \times .1075 = 1540.35$   
Less: drawings 820.00  
Amount due \$720.35

ID: cbm12h 1-29

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

- 30) Gross sales = \$34250.00  
Less: returns = 1055.00  
Net sales = \$33195.00  
Commission: =  $.035 \times 15000.00 = \$525.00$   
=  $.07 \times 6000.00 = 420.00$   
=  $.09 \times 12195.00 = \underline{1097.55}$   
Total commission = \$2042.55

ID: cbm12h 1-30

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

- 31) Net sales =  $(1 - .055) \times 8320 = 7862.40$   
Commission rate =  $\frac{943.25}{7862.40} = 11.997\%$

ID: cbm12h 1-31

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

## Answer Key

Testname: UNTITLED1

$$\begin{array}{l} 32) \text{ a) Salary} = \$350.00 \\ \text{Commission} = .145 * 2480.00 = \$359.60 \\ \text{Gross earnings} = \$709.60 \end{array}$$

$$\begin{array}{l} \text{b) Salary} = \$350.00 \\ \text{Commission} = .145 * 3780.00 = \$548.10 \\ \text{Gross earnings} = \$898.10 \end{array}$$

ID: cbm12h 1-32

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

$$33) \text{ a) } \frac{42120}{2 \times 12} = \$1755.00$$

$$\text{b) } \frac{42120}{52 \times 36} = \$22.50$$

$$\begin{array}{l} \text{c) Overtime} = 12 \times 22.50 \times 1.5 = \$405.00 \\ \text{Gross pay} = 1755.00 + 405.00 = \$2160.00 \end{array}$$

ID: cbm12h 1-33

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

$$\begin{array}{l} 34) \text{ Gross earnings} = \$554.30 \\ \text{Less: base salary} = \underline{350.00} \\ \text{Commission:} = \$204.30 \\ \text{Sales for week} = \$6124.00 \\ \text{Quota} = \underline{4500.00} \\ \text{Commission sales} = \$1624.00 \\ \text{Rate of commission} = \frac{204.30}{1624.00} = 12.58\% \end{array}$$

ID: cbm12h 1-34

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

$$35) \text{ Weekly pay} = \frac{41840.00}{52} = 804.6154$$

$$\text{Hourly pay} = \frac{804.62}{40} = \$20.1154$$

$$\text{Regular monthly earnings} = \frac{41840}{12} = 3486.67$$

$$\text{Overtime earnings} = 20.1154 \times 9 \times 1.5 = 271.56$$

$$\text{Gross} = \text{Regular time} + \text{Overtime} = 3486.66 + 271.56 = \$3758.22$$

ID: cbm12h 1-35

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

## Answer Key

Testname: UNTITLED1

36) Gross earnings = 937.50

Less: base salary = 664.00

Commission 273.50

Commission sales =  $\frac{273.50}{.0675} = 4051.85$

Sales for week =  $$(7800 + 4051.85) = \$11\,851.85$

ID: cbm12h 1-36

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

37) Commission on first \$1250.00 is  $0.045 \times 1250.00 = 56.25$

Commission on next \$4500.00 is  $0.115 \times 4500.00 = 517.50$

Commission on remainder =  $0.1375 \times 8450 = 1161.875$

After rounding to the nearest cent, gross earnings are \$1293.63.

ID: cbm12h 1-37

Page Ref: 24-32

Topic: 1.5 Applications - Payroll

38) For the first 40 hours =  $40(12.40) = 496.00$

For the next 6 hours =  $6(12.40 + 6.20) = 111.60$

The total =  $496.00 + 111.60 = \$607.60$

ID: cbm12h 1-38

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

39) Method A Regular hours =  $37.5 \times 17.60 = 660.00$

Overtime pay =  $5.25 \times 17.60 \times 1.50 = 138.60$

$5 \times 17.60 \times 2 = \underline{176.00}$

Gross earnings = \$974.60

Method B At regular rate:  $47.75 \times 17.60 = 840.40$

Overtime premium:  $5.25 \times 17.60 \times 0.50 = 46.20$

Overtime premium  $5 \times 17.60 \times 1 = \underline{88.00}$

Gross earnings = \$974.60

ID: cbm12h 1-39

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

40) Annual salary =  $1250.00 \times 24 = 30000.00$

Weekly pay =  $\frac{30000}{52} = 576.92$

Hourly rate =  $\frac{576.92}{35} = \$16.48$

ID: cbm12h 1-40

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

## Answer Key

Testname: UNTITLED1

41) Annual salary =  $2754.30 \times 24 = 66103.20$

$$\text{Weekly pay} = \frac{66103.20}{52} = 1271.22$$

$$\text{Hourly rate} = \frac{1271.22}{42} = \$30.27$$

ID: cbm12h 1-41

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

42) Let the regular rate of pay be  $y$ .

Regular weekly pay =  $37.5y$

Overtime pay =  $(9.75 \times 1.5)y = 14.625y$

Total pay =  $37.5y + 14.625y = 750.7$

$$52.125y = 750.73$$

$$y = 14.40$$

The regular rate of pay is \$14.40

ID: cbm12h 1-42

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

43) Total hours = 51

Regular hours = 40

Overtime hours = 11

At time-and-a-half, overtime hours are equivalent to

$$11 \times 1.5 = 16.5 \text{ regular hours}$$

Rate of pay =  $596/56.5 = \$10.55$

ID: cbm12h 1-43

Page Ref: 24-32

Topic: 1.5 Applications - Payroll

44) Barb's revenue of \$38 790 includes 5% GST.

$$\text{GST taxable revenue} = \frac{38790}{1.05} = 36\,942.86$$

GST collected = 5% of 36 942.86 = 1 847.14

GST paid = 5% of 9 500 = 475.00

Barb owes Revenue Canada  $\$1847.14 - \$475 = \$1372.14$

ID: cbm12h 1-44

Page Ref: 30-33

Topic: 1.6 Applications - Taxes

45) Savings on PST = 7% of \$52.00 =  $0.07(52.00) = \$3.64$

ID: cbm12h 1-45

Page Ref: 32-36

Topic: 1.6 Applications - Taxes

## Answer Key

Testname: UNTITLED1

$$\begin{array}{lcl} 46) \text{ Total cost in London} & & \\ \text{Retail price} & = & \$855.00 \\ \text{HST} = 13\% \text{ of } \$855.00 = 0.13(855) & & \underline{\$111.15} \\ \text{Total cost in London} & = & \$966.15 \end{array}$$

$$\begin{array}{lcl} \text{Total cost in Lethbridge} & & \\ \text{Retail price} & = & \$855.00 \\ \text{GST} = 5\% \text{ of } \$855.00 = 0.05(855) & & \$42.75 \\ \text{PST} & & \underline{\text{nil}} \\ \text{Total cost in Lethbridge} & & \underline{\$897.75} \\ \text{Difference} = \text{PST} & & \$68.40 \end{array}$$

ID: cbm12h 1-46

Page Ref: 30-33

Topic: 1.6 Applications - Taxes

$$47) 249500 \times \frac{15}{1000} = \$3742.50$$

ID: cbm12h 1-47

Page Ref: 30-33

Topic: 1.6 Applications - Taxes

$$48) \text{ Property tax} = \$326\,500 \times 1.05351/100 = \$3439.71$$

ID: cbm12h 1-48

Page Ref: 30-33

Topic: 1.6 Applications - Taxes

$$49) 160\,000 \times \frac{20}{1000} = \$3200.00$$

ID: cbm12h 1-49

Page Ref: 30-33

Topic: 1.6 Applications - Taxes

$$50) \text{ Property tax} = 32500 \left[ \frac{21.368}{1000} \right] = \$6950.45$$

ID: cbm12h 1-50

Page Ref: 30-33

Topic: 1.6 Applications - Taxes

$$51) \text{ a) Total expenditure} = \$(11050000 + 2100000 + 270000 + 670000 + 958500) \\ = 14947500$$

$$\text{Total residential property tax} = 0.70(14947500) = \$10463250$$

$$\text{b) Residential mill rate} = \frac{10463250}{350000000} (1000) = 29.895$$

$$\text{c) Property tax} = \$235000 \left[ \frac{29.895}{1000} \right] = \$7025.33$$

ID: cbm12h 1-51

Page Ref: 30-33

Topic: 1.6 Applications - Taxes

## Answer Key

Testname: UNTITLED1

$$\begin{aligned} 52) 77 \times 0.65 &= \$50.05 \\ 208 \times 0.83\frac{1}{4} &= 173.16 \\ 621 \times 1.19 &= 738.99 \\ 414 \times 1.95 &= \underline{807.30} \\ & \$1769.50 \end{aligned}$$

ID: cbm12h 1-52

Page Ref: 16-21

Topic: 1.4 Applications - Averages

$$\begin{aligned} 53) \text{ January 1 - May 31:} & 35000 \times 5 = 175000 \\ \text{ June 1 - July 31:} & 30000 \times 2 = 60000 \\ \text{ August 1 - October 31:} & 28100 \times 3 = 84300 \\ \text{ November 1 - December 31:} & 34100 \times \frac{2}{12} = \underline{68200} \\ \text{ Total} & 387500 \end{aligned}$$

$$\text{Average monthly investment} = \frac{387500}{12} = \$32\,291.67$$

ID: cbm12h 1-53

Page Ref: 16-21

Topic: 1.4 Applications - Averages

$$\begin{aligned} 54) \text{ January 1 - May 31:} & 40000 \times 5 = 200000 \\ \text{ June 1 - July 31:} & 25000 \times 2 = 50000 \\ \text{ August 1 - October 31:} & 23000 \times 3 = 69000 \\ \text{ November 1 - December 31:} & 31000 \times \frac{2}{12} = \underline{62000} \\ \text{ Total} & 381000 \end{aligned}$$

$$\text{Average monthly investment} = \frac{381000}{12} = \$31\,750.00$$

ID: cbm12h 1-54

Page Ref: 16-21

Topic: 1.4 Applications - Averages

$$\begin{aligned} 55) \text{ a) Annual salary} &= 24 \times 1870.80 = 44899.20 \\ \text{ Weekly salary} &= 44899.20 \div 52 = 863.45 \\ \text{ Hourly rate of pay} &= \frac{863.45}{40} = \$21.58625 \\ \text{ b) Regular semimonthly pay} &= 1870.80 \\ \text{ Overtime pay} &= 7.5 \times 21.58625 \times 1.5 = \underline{242.85} \\ \text{ Gross earnings} & \$2113.65 \end{aligned}$$

ID: cbm12h 1-55

Page Ref: 23-29

Topic: 1.5 Applications - Payroll



## Answer Key

Testname: UNTITLED1

- 56) a) Semimonthly pay =  $50292.48 \div 24 = 2095.52$   
b) Weekly pay =  $50292.48 \div 52 = 967.16308$   
Hourly rate =  $967.16308 \div 37.5 = 25.791015$   
c) Regular earnings = 2095.52  
Overtime pay =  $12.5 \times 25.791015 \times 1.5 = \underline{483.58}$   
Gross earnings = \$2579.10

ID: cbm12h 1-56

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

- 57) a) Regular earnings =  $40 \times 11.20 = 448.00$   
Overtime pay =  $4 \times 11.20 \times 1.5 = \underline{67.20}$   
Gross earnings = \$515.20

- b) Overtime premium =  $4 \times 11.20 \times 0.5 = \$22.40$

ID: cbm12h 1-57

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

- 58) Gross earnings = 698.10  
Regular earnings =  $35 \times 15.60 = 546.00$   
Overtime pay =  $698.10 - 546.00 = 152.10$   
Overtime hours =  $\frac{152.10}{15.60 \times 15} = 6.5$  hours  
Total number of hours worked =  $35 + 6.5 = 41.5$  hours

ID: cbm12h 1-58

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

- 59) a) Net sales = Gross sales - Returns =  $11\,160 - 120 = 11\,040$   
Commission: 2% of 6000 = 120.00  
4% of 3000 = 120.00  
6.25% of  $(11\,040 - 9000) = 127.50$   
Gross earnings =  $120.00 + 120.00 + 127.50 = \$367.50$   
b) Average hourly rate =  $367.50 \div 40 = \$9.19$

ID: cbm12h 1-59

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

- 60) a) Base salary on quota of \$9500 = 370.00  
Commission = 5.75% on 1840 = 105.80  
Gross earnings = \$475.80  
b) Hourly rate =  $475.80 \div 35 = \$13.59$

ID: cbm12h 1-60

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

## Answer Key

Testname: UNTITLED1

61) Net sales =  $2551.05 \div 0.145 = 17593.448$   
Net sales = Gross sales - returns  
 $17593.448 = \text{Gross sales} - 6\% \text{ of Gross sales}$   
 $17593.448 = 94\% \text{ of Gross sales}$   
Gross sales =  $\frac{17593.48}{.94} = \$18\,716.43$

ID: cbm12h 1-61

Page Ref: 16-21

Topic: 1.5 Applications - Payroll

62) a) Annual gross earnings =  $1931.54 \times 12 = 23\,178.48$   
Weekly gross earnings =  $\frac{23178.48}{52} = 445.74$   
Hourly rate of pay =  $\frac{445.74}{38} = \$11.73$   
b) Regular semi-monthly gross earnings =  $\frac{1931.54}{2} = 965.77$   
Overtime pay =  $1270.75 - 965.77 = 304.98$   
Overtime rate =  $11.73 \times 2 = 23.46$   
Overtime hours =  $\frac{304.98}{23.46} = 13 \text{ hours}$

ID: cbm12h 1-62

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Topic: 1.5 Applications - Payroll

63) a) Annual salary =  $792.50 \times 24 = 19020.00$   
Weekly pay =  $19020.00 \div 52 = 365.76923$   
Hourly rate of pay =  $365.76923 \div 37.5 = \$9.75$   
b) Gross earnings = 946.30  
Regular earnings =  $\frac{792.50}{}$   
Overtime pay = 153.80  
Overtime hourly rate =  $9.75 \times 1.5 = 14.625$   
Overtime hours =  $153.80 \div 14.625 = 10.516 \text{ hr.}$

ID: cbm12h 1-63

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Topic: 1.5 Applications - Payroll

64) Total hours = 45.5  
Regular hours =  $\frac{40.00}{}$   
Overtime hours = 5.5  
5.5 overtime hours are equivalent to  $5.5 \times 1.5 = 8.25$  regular hours.  
Hourly rate of pay =  $\frac{711.20}{48.25} = \$14.74$

ID: cbm12h 1-64

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

## Answer Key

Testname: UNTITLED1

$$\begin{aligned} 65) \text{ GST collected} &= 5\% \text{ of } \$235000 = 0.05(235000) = 11750.00 \\ \text{GST paid} &= 5\% \text{ of } \$24750 = 0.05(24750) = \underline{-1237.50} \\ \text{GST remittance} &= \$10512.50 \end{aligned}$$

ID: cbm12h 1-65

Page Ref: 32-35

Topic: 1.6 Applications - Taxes

$$\begin{aligned} 66) \text{ Amount paid in Penticton, BC} \\ &= \text{Retail Price} + 12\% \text{ HST} \\ &= 2975(1.12) \\ &= \$3332.00 \end{aligned}$$

Amount paid in Thunder Bay, ON

$$\begin{aligned} &= \text{Retail price} + 13\% \text{HST} \\ &= 2975(1.13) \\ &= \$3361.75 \end{aligned}$$

The difference =  $3361.75 - 3332 = \$29.75$ , that is the 1% difference in the HST.

ID: cbm12h 1-66

Page Ref: 30-33

Topic: 1.6 Applications - Taxes

$$\begin{aligned} 67) \text{ Amount paid in Oakville, Ont} \\ &= \text{Retail Price} + 13\% \text{ HST} \\ &= 1000(1.13) \\ &= \$1130 \end{aligned}$$

Amount paid in Victoria, B.C.

$$\begin{aligned} &= \text{Retail price} + 12\% \text{ HST} \\ &= 1000(1.12) \\ &= \$1120 \end{aligned}$$

The difference =  $1130 - 1120 = \$10.00$ , that is the 1% difference in the HST

ID: cbm12h 1-67

Page Ref: 30-33

Topic: 1.6 Applications - Taxes

$$68) \text{ Property tax in Airdrie} = 165000 \left[ \frac{22.051}{1000} \right] = 3638.42$$

$$\text{Property tax in Kimberly} = 145000 \left[ \frac{25.124}{1000} \right] = 3642.98$$

The person in Kimberly pays \$4.56 more in property tax.

ID: cbm12h 1-68

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Topic: 1.6 Applications - Taxes

$$\begin{aligned} 69) 74 \times 1.35 &= 99.90 \\ 90 \times 0.16 \frac{1}{3} &= 14.70 \\ 70 \times .885 &= 61.95 \\ 58 \times 1.35 &= \underline{78.30} \\ \text{Total} &= \$254.85 \end{aligned}$$

ID: cbm12h 1-69

Page Ref: 16-21

Topic: 1.4 Applications - Averages

## Answer Key

Testname: UNTITLED1

$$\begin{aligned} 70) \text{ Total size} &= \left[ 5\frac{3}{4} + 7\frac{1}{3} + 5\frac{5}{8} + 4\frac{1}{6} \right] \text{ ha} \\ &= (5.75 + 7.3333333 + 5.625 + 4.1666667) \text{ ha} \\ &= 22.875 \text{ ha} \end{aligned}$$

$$\text{Sales value} = 17120 \times 22.875 = \$391620.00$$

ID: cbm12h 1-70

Page Ref: 16-21

Topic: 1.4 Applications - Averages

$$\begin{aligned} 71) \text{ Total size} &= \left[ 1\frac{3}{4} + 2\frac{1}{3} + 3\frac{5}{8} + 4\frac{1}{6} \right] \text{ ha} \\ &= (1.75 + 2.3333333 + 3.625 + 4.1666667) \text{ ha} \\ &= 11.875 \text{ ha} \end{aligned}$$

$$\text{Sales value} = 50000 \times 11.875 = \$593\,750.00$$

ID: cbm12h 1-71

Page Ref: 16-21

Topic: 1.4 Applications - Averages

$$72) \text{ Net sales} = 0.895 \times 7880.00 = 7052.60$$

$$\text{Commission rate} = \frac{926.59}{7052.60} = 13.14\%$$

ID: cbm12h 1-72

Page Ref: 16-21

Topic: 1.5 Applications - Payroll

$$\begin{aligned} 73) \text{ Total hours} &= 9.25 + 8.5 + 10.5 + 13.5 + 6.25 = 48 \\ \text{Regular hours} &= 8 + 8 + 8 + 8 + 6.25 = 38.25 \\ \text{Overtime hours} &= 1.25 + 0.5 + 2.5 + 5.5 = 9.75 \\ \text{Regular pay} &= 38.25 \times 19.60 = 749.70 \\ \text{Overtime pay} &= 9.75 \times 19.60 \times 1.5 = \underline{286.65} \\ \text{Gross pay} &= \$1036.35 \end{aligned}$$

ID: cbm12h 1-73

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

$$\begin{aligned} 74) \text{ Base salary on first } \$2900 &= \$800.00 \\ \text{Commission on next } \$2100 &= 0.14 \times 2100 = 294.00 \\ \text{Commission on additional sales} &= (8455 - 5000) \times 0.19 = 3455 \times .19 = \underline{656.45} \\ \text{Gross earnings} &= \$1750.45 \end{aligned}$$

ID: cbm12h 1-74

Page Ref: 16-21

Topic: 1.5 Applications - Payroll

$$\begin{aligned} 75) \text{ Base salary on first } \$3000 &= \$200.00 \\ \text{Commission on next } \$1000 &= 0.25 \times 1000 = 250.00 \\ \text{Commission on additional sales} &= (6000 - 4000) \times 0.40 = 2000 \times .40 = \underline{800.00} \\ \text{Gross earnings} &= \$1250.00 \end{aligned}$$

ID: cbm12h 1-75

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

## Answer Key

Testname: UNTITLED1

76) GST collected =  $(0.05)152\,000 = \$7\,600$   
GST paid =  $(0.05)29\,920 = \$1\,496$   
GST remittance =  $7600 - 1496 = \$6104$

ID: cbm12h 1-76

Page Ref: 30-33

Topic: 1.6 Applications - Taxes

77)

Total value			\$5730.00
GST	5% of \$5730.00	\$286.50	
Manitoba PST	7% of 5730.00	401.10	<u>687.60</u>
Total purchase price			\$6417.60

ID: cbm12h 1-77

Page Ref: 30-33

Topic: 1.6 Applications - Taxes

78)

Purchase price		\$11.65
Less discount		<u>1.50</u>
Net price		10.15
Add shipping charge		<u>2.10</u>
Total cost before taxes		12.25
HST 15% of \$12.25	1.8375	1.84
Total cost in Nova Scotia		\$14.09

ID: cbm12h 1-78

Page Ref: 30-33

Topic: 1.6 Applications - Taxes

79) a) Total Residential property tax =  $0.9(45\,000\,000) = \$40\,500\,000$

b) Mill rate =  $\frac{40500000}{900000000}(1000) = 45$

c) Property tax =  $235000 \frac{45}{1000} = \$10\,575.00$

ID: cbm12h 1-79

Page Ref: 30-33

Topic: 1.6 Applications - Taxes

80)

a) Total Residential property tax =  $0.8(300\,000\,000) = \$240\,000\,000$

b) Mill rate =  $\frac{240000000}{1100000000}(1000) = 218.18$

c) Property tax =  $500000 \left[ \frac{218.18}{1000} \right] = \$109\,090$

ID: cbm12h 1-80

Page Ref: 30-33

Topic: 1.6 Applications - Taxes

81) D

ID: cbm12h 1-81

Page Ref: 5-6

Topic: 1.1 Basics of Arithmetic

## Answer Key

Testname: UNTITLED1

82) A

ID: cbm12h 1-82

Page Ref: 5-6

Topic: 1.1 Basics of Arithmetic

83) A

ID: cbm12h 1-83

Page Ref: 5-6

Topic: 1.1 Basics of Arithmetic

84) E

ID: cbm12h 1-84

Page Ref: 5-6

Topic: 1.1 Basics of Arithmetic

85) D

ID: cbm12h 1-85

Page Ref: 16-21

Topic: 1.4 Applications - Averages

86) B

ID: cbm12h 1-86

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

87) D

ID: cbm12h 1-87

Page Ref: 25-29

Topic: 1.5 Applications - Payroll

88) C

ID: cbm12h 1-88

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

89) A

ID: cbm12h 1-89

Page Ref: 16-21

Topic: 1.5 Applications - Payroll

90) A

ID: cbm12h 1-90

Page Ref: 5-6

Topic: 1.1 Basics of Arithmetic

91) B

ID: cbm12h 1-91

Page Ref: 16-21

Topic: 1.4 Applications - Averages

92) D

ID: cbm12h 1-92

Page Ref: 30-33

Topic: 1.6 Applications - Taxes

## Answer Key

Testname: UNTITLED1

93) Rate per day =  $\frac{1345}{3} = \$269/\text{day}$

Rate per hour =  $\frac{1345}{35} = \$38.43/\text{hr}$

Total working days in October 2013 = 22 days

Pay for regular days =  $269 \times 22 = \$5918$

Pay for overtime =  $5 \times 2 \times 38.43 = \$384.29$

Gross earnings for October 2013 =  $\$5918 + \$384.29 = \$6302.29$

ID: cbm12h 1-93

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

94) Base salary =  $12 \times 40 \times 4 = \$1920$

Commission earned in August =  $2\% \times 75000 = \$1500$

Total pay for August =  $\$1920 + \$1500 + \$1000 = \$4420$

ID: cbm12h 1-94

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

95) Base salary =  $12 \times 40 \times 4 = \$1920$

Commission earned in August =  $2\% \times 75000 = \$1500$

Total incentive pay =  $7 \times \$1000 = \$7000$

Total pay for August =  $\$1920 + \$1500 + \$7000 = \$10420$

ID: cbm12h 1-95

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

96) B

ID: cbm12h 1-96

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

97) C

ID: cbm12h 1-97

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

98) E

ID: cbm12h 1-98

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

99) \$0 are invested for 2 months

\$90,000 are invested for 3 months

$\$90000 + \$10000 = \$100,000$  are invested for 1 month

$\$100,000 - \$17000 = \$83000$  are invested for 2 months

$\$83000 + \$2000 = \$85000$  are invested for 4 months

Average investment =  $\frac{0 \times 2 + 9000 \times 3 + 100000 \times 1 + 83000 \times 2 + 85000 \times 4}{12}$

=  $\frac{876000}{12} = \$73\,000$  per month

ID: cbm12h 1-99

Page Ref: 16-21

Topic: 1.4 Applications - Averages

## Answer Key

Testname: UNTITLED1

100) E

ID: cbm12h 1-100

Page Ref: 16-21

Topic: 1.4 Applications - Averages

- 101) Contributing rate of return from bonds fund =  $25\% \times 7\% = 1.75\%$   
Contributing rate of return from Canadian equity fund =  $20\% \times 3\% = 0.6\%$   
Contributing rate of return from US equity fund =  $40\% \times 9\% = 3.6\%$   
Contributing rate of return from money market =  $(100\% - 25\% - 20\% - 40\%) \times (-1\%)$   
 $= 15\% \times (-1\%) = -0.15\%$   
Overall return rate on portfolio =  $1.75\% + 0.6\% + 3.6\% - 0.5\% = 5.8\%$

ID: cbm12h 1-101

Page Ref: 16-21

Topic: 1.4 Applications - Averages

102)

Course	Credits	GPV	Credits $\times$ GPV
English	2	2.7	5.4
French	2	3.0	6.0
Math	3	4.0	12.0
Physics	3	4.0	12.0
Chemistry	3	3.7	11.1
Social Science	1	3.3	3.3
Arts	1	2.0	2.0
Total	15		51.8

$$\text{Grade Point Average} = \frac{52}{15} = 3.45$$

ID: cbm12h 1-102

Page Ref: 16-21

Topic: 1.4 Applications - Averages

103) D

ID: cbm12h 1-103

Page Ref: 16-21

Topic: 1.4 Applications - Averages

- 104) Total Revenue =  $195432 + 24732 = \$220\,164$   
Total Costs =  $19785 + 36000 + 9767 + 21873 = \$87\,425$   
Net Revenue =  $220164 - 87425 = \$132\,739$   
GST remitted =  $\$6636.95$

ID: cbm12h 1-104

Page Ref: 30-33

Topic: 1.6 Applications - Taxes



## Answer Key

Testname: UNTITLED1

105) Property Tax in Whitby =  $\frac{13.59815}{1000} \times 389000 = \$5289.68$

Property Tax in Oshawa =  $\frac{16.18347}{1000} \times 369000 = \$5971.70$

Net property tax penalty = \$682.02

ID: cbm12h 1-105

Page Ref: 30-33

Topic: 1.6 Applications - Taxes

106) A

ID: cbm12h 1-106

Page Ref: 30-33

Topic: 1.6 Applications - Taxes

107) Total property tax rate =  $4.19938 + 7.18877 + 2.21 = 13.59815$

Total property tax =  $\frac{13.59815}{1000} \times 339500 = \$4616.57$

ID: cbm12h 1-107

Page Ref: 30-33

Topic: 1.6 Applications - Taxes

108) C

ID: cbm12h 1-108

Page Ref: 6-11

Topic: 1.2 Fractions

109) A

ID: cbm12h 1-109

Page Ref: 6-11

Topic: 1.2 Fractions

110) E

ID: cbm12h 1-110

Page Ref: 6-11

Topic: 1.2 Fractions

111) B

ID: cbm12h 1-111

Page Ref: 6-11

Topic: 1.2 Fractions

112) B

ID: cbm12h 1-112

Page Ref: 5-6

Topic: 1.1 Basics of Arithmetic

113)  $0.25/100 = 0.0025$

ID: cbm12h 1-113

Page Ref: 12-15

Topic: 1.3 Percent

114)  $0.035 * 100 = 3.5\%$

ID: cbm12h 1-114

Page Ref: 12-15

Topic: 1.3 Percent

## Answer Key

Testname: UNTITLED1

115) E

ID: cbm12h 1-115

Page Ref: 12-15

Topic: 1.3 Percent

116) D

ID: cbm12h 1-116

Page Ref: 12-15

Topic: 1.3 Percent

117) E

ID: cbm12h 1-117

Page Ref: 12-15

Topic: 1.3 Percent

118) D

ID: cbm12h 1-118

Page Ref: 12-15

Topic: 1.3 Percent

119) D

ID: cbm12h 1-119

Page Ref: 12-15

Topic: 1.3 Percent

$$\begin{aligned}120) &= 2[4^2 - 3 \times 12 + 4(7 - 9 \times 50)] + (6 + 9^4) \\ &= 2[16 - 3 \times 12 + 4(7 - 9 \times 50)] + 6 + 9^4 \\ &= 2[16 - 36 + 4(-443)] + 6 + 9^4 \\ &= 2[16 - 36 - 1772] + 6 + 9^4 \\ &= 2[-1792] + 6 + 9^4 \\ &= -3584 + 6 + 9^4 \\ &= -3584 + 6 + 6561 \\ &= -3578 + 6561 \\ &= 2983\end{aligned}$$

ID: cbm12h 1-120

Page Ref: 5-6

Topic: 1.1 Basics of Arithmetic

$$\begin{aligned}121) &= 44[3 + 72 - 15 - 19] - [42 - 3(77 \div 7) - 9] \\ &= 44[60 - 19] - [42 - 3(11) - 9] \\ &= 44(41) - [42 - 33 - 9] \\ &= 44(41) - [9 - 9] \\ &= 1804 - 0 \\ &= 1804\end{aligned}$$

ID: cbm12h 1-121

Page Ref: 5-6

Topic: 1.1 Basics of Arithmetic

## Answer Key

Testname: UNTITLED1

$$122) = \frac{2540}{1.56 + \frac{671}{1342}}$$

$$= \frac{2540}{1.56 + \frac{1}{2}}$$

$$= \frac{2540}{1.56 + 0.5}$$

$$= \frac{2540}{2.06}$$

$$= 1233.01$$

ID: cbm12h 1-122

Page Ref: 6-11

Topic: 1.2 Fractions

$$123) 1.416$$

ID: cbm12h 1-123

Page Ref: 6-11

Topic: 1.2 Fractions

$$124) 0.333$$

ID: cbm12h 1-124

Page Ref: 6-11

Topic: 1.2 Fractions

$$125) \frac{8}{13}$$

ID: cbm12h 1-125

Page Ref: 6-11

Topic: 1.2 Fractions

$$126) \frac{17}{50}$$

ID: cbm12h 1-126

Page Ref: 12-15

Topic: 1.3 Percent

$$127) \frac{413}{500}$$

ID: cbm12h 1-127

Page Ref: 12-15

Topic: 1.3 Percent

$$128) 67\%$$

ID: cbm12h 1-128

Page Ref: 12-15

Topic: 1.3 Percent

$$129) 455\%$$

ID: cbm12h 1-129

Page Ref: 12-15

Topic: 1.3 Percent

Answer Key

Testname: UNTITLED1

130) 87.5%

ID: cbm12h 1-130

Page Ref: 12-15

Topic: 1.3 Percent

131)  $\frac{1}{13}$  of the house's actual cost is  $\frac{4}{13}$  of the cost  $\div 4$ .

$$\$246\,000 \div 4 = \$61\,500.$$

$\frac{13}{13}$  of the cost or all the actual value of the house, is  $\frac{1}{13}$  of the cost  $\times 13$ .

$$\$61\,500 \times 13 = \$799\,500$$

$\frac{13}{13}$  of the house's price is \$799 500.

$$\$799\,500 \div \$250 = \$3198.$$

$$\$3198 \times \$1.25 = \$3997.50$$

The realtor earned \$3997.50.

ID: cbm12h 1-131

Page Ref: 16-21

Topic: 1.4 Applications - Averages

132) 
$$= \frac{11.75}{1} \times \frac{13}{5} + \frac{11.75}{1} \times \frac{37}{20} + \frac{11.75}{1} \times \frac{29}{6} + \frac{11.75}{1} \times \frac{15}{12} + \frac{11.75}{1} \times \frac{19}{3} + \frac{11.75}{1} \times \frac{27}{10}$$

$$= \frac{152.75}{5} \times \frac{434.75}{20} \times \frac{340.75}{6} \times \frac{176.25}{12} \times \frac{223.25}{3} \times \frac{317.25}{10}$$

$$= 30.55 + 21.7375 + 56.7916 + 14.6875 + 74.4166 + 31.725$$

$$= 229.91$$

= The party room owners were paid \$229.91 in total.

ID: cbm12h 1-132

Page Ref: 16-21

Topic: 1.4 Applications - Averages

133)

Quantity	Description	Unit Price	Total \$
88	Alpha	\$0.37	32.56
65	Bravo	$96\frac{4}{5}$ ¢	62.92
73	Charlie	\$0.675	49.275
46	Delta	\$1.44	66.24

ID: cbm12h 1-133

Page Ref: 16-21

Topic: 1.4 Applications - Averages

134)  $\$4\,303.00 - \$243 = \$4\,100.00$

$$\$4\,060 \div 20 = \$203$$

$$\$203 \div 6 = \$33.83$$

Oliver's hourly rate of pay is \$33.83

ID: cbm12h 1-134

Page Ref: 23-29

Topic: 1.5 Applications - Payroll

## Answer Key

Testname: UNTITLED1

135) a)  $52 \div 2 = 26$

He has 26 pay periods in a year.

$$\$143\,000 \div 26 = \$5500$$

The employee's gross pay per pay period is \$5500

b)  $\$5500 \div 10 = \$550$

$$\$550 \div 8 = \$68.75$$

The employee earns \$68.75 per hour.

ID: cbm12h 1-135

Page Ref: 23-28

Topic: 1.5 Applications - Payroll

136)  $9.975\%$  of 182 =  $0.09975(182) = \$18.15$

ID: cbm12h 1-136

Page Ref: 32-35

Topic: 1.6 Applications - Taxes

137)  $24 + 21 = 45$  Tip =  $17\%$  of 45 =  $0.17(45) = \$7.65$  HST on the haircut =  $14\%$  of 24 =  $0.14(24) = \$3.36$  HST on the colouring =  $14\%$  of 21 =  $0.14(21) = \$2.94$  Total =  $45 + 7.65 + 3.36 + 2.94 = \$58.95$

ID: cbm12h 1-137

Page Ref: 30-33

Topic: 1.6 Applications - Taxes

138)  $0.01259(12500000) = 157375$

ID: cbm12h 1-138

Page Ref: 30-33

Topic: 1.6 Applications - Taxes

139)  $(4 + 6(2)^2 + 2)/15 = (4 + 6(4) + 2)/15 = (4 + 24 + 2)/15 = 30/15 = 2$

ID: cbm12h 1-139

Page Ref: 5-6

Topic: 1.1 Basics of Arithmetic

140)  $3 + 30 = 33$

ID: cbm12h 1-140

Page Ref: 5-6

Topic: 1.1 Basics of Arithmetic

141)  $69/88$

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Topic: 1.3 Percent

142)  $211.36\%$

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Topic: 1.3 Percent

143)  $639.54$

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Topic: 1.3 Percent

144)  $(2 + 9 + 0.875 + 34.02 + 52 + 1 + 83.75 + 0.5 + 6 + 4.909)/10 = 19.405$

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Topic: 1.4 Applications - Averages

## Answer Key

Testname: UNTITLED1

- 145) a) Yearly salary = \$98 351.00  
Biweekly gross pay =  $98\,351/26 = \$3782.73$   
b) Biweekly gross pay = \$3782.73  
Weekly gross pay =  $3782.73/2 = \$1891.37$   
Hourly rate =  $1891.37/32 = \$59.11$   
c) Hourly rate = \$59.11  
Gross overtime earnings =  $59.11(1.75)(8) = \$827.54$

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Topic: 1.5 Applications - Payroll

- 146) a) Gross sales = \$11 456.00  
Commission on first \$5000 =  $0.134(5000) = \$670.00$   
Commission on next \$3000 =  $0.141(3000) = \$423$   
Commission on additional sales =  $0.15(11456 - 8000) = \$518.40$   
Total gross commission = \$1611.40  
b)  $1611.40 - 1235 = \$376.40$

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Topic: 1.5 Applications - Payroll

- 147) a) GST collected: 5% of \$23000 =  $0.05(23000) = \$1150.00$   
GST Paid: 5% of 4032 =  $0.05(4032) = \underline{- \$201.60}$   
GST Remittance: = \$948.40

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Topic: 1.6 Applications - Taxes

- 148) a) Quiz Average =  $(80 + 90 + 80 + 90 + 80 + 50 + 80 + 70)/8 = 77.5\%$   
b) Average course grade =  $[(77.5)20 + (65)15 + (78)15 + (72)50] / (20 + 15 + 15 + 50)$   
 $= (1350 + 2145 + 3600)/100 = 70.95\%$

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Topic: 1.4 Applications - Averages

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