

## Mock Exam

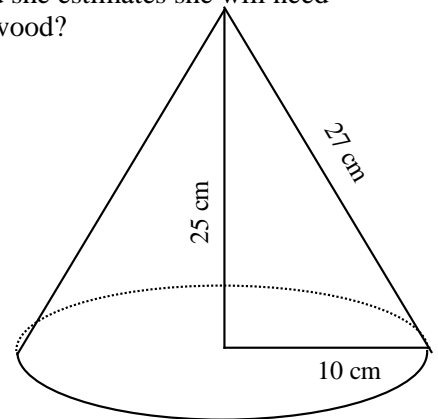
**Part 1: Multiple Choice :**

1. Franco sells furniture for a living. He is paid 25% of the total amount he sells. This is called...
  - a. Salary
  - b. Wage
  - c. Commission
  - d. Piecework
  
2. Henry works as a waiter at the Portage. He earns \$12.50/hour and keeps 70% of his tips. In one shift, he worked 8 hours and received \$78 in tips for providing excellent customer service. Henry's gross pay for the day is...
  - a. \$154.60
  - b. \$54.60
  - c. \$546
  - d. \$100
  
3. The listed price of a smartphone in Ireland is 350 euros. The same smartphone is listed here in Canada for \$550. Where is the phone cheaper? (1euro = 1.580814 CAD)
  - a. Canada
  - b. Cost is the same
  - c. Ireland
  - d. Who needs a smartphone anyway?
  
4. George is paid by commission. He works 35 hours a week and sells on average \$250 000 worth of cars in a month. If George is paid 14.2% commission, what is his average monthly commission?
  - a. \$35000
  - b. \$35555
  - c. \$49700
  - d. \$35500
  
5. The regular price of ham at a the grocery deli is \$1.54/150 g. If the ham is on sale for 30% off, what is the cost of 302 g?
  - a. \$2.17
  - b. \$3.70
  - c. \$3.10
  - d. \$139.52
  
6. Rosanne is paid \$26.25 per hour for a thirty five hour week, with time and a half for overtime. If she worked 49 hours last week, how many overtime hours will she have?
  - a. \$918.75
  - b. \$1470
  - c. 14
  - d. 35
  
7. Rosanne is paid \$26.25 per hour for a thirty five hour week, with time and a half for overtime. If she worked 49 hours last week, what is her gross pay?
  - a. \$918.75
  - b. \$1470
  - c. 14
  - d. 35
  
8. You invest \$6000, at an interest rate of 4% compounded semi-annually, for 5 years. How much interest would you earn?
  - a. \$1313.97
  - b. \$7313.97
  - c. \$6000
  - d. \$6144
  
9. Allison saw an advertisement for a store sale offering all jewelry at 20% off. The necklace that Allison is interested in retails for \$108.56. How much will the necklace cost after 13% HST is applied to the price?
  - a. \$84.03
  - b. \$98.14
  - c. \$86.85
  - d. \$122.67
  
10. You invest \$6650 in an account paying 4.34% per annum, compounded quarterly, for 6 years. How much will you have at the end of 6 years?
  - a. \$1731.66
  - b. \$1965.94
  - c. \$8615.94
  - d. \$8381.66
  
11. Amanda is charged 19.65% per annum on her credit card balances. She uses her credit card with no previous balance, for a cash advance of \$680. What is the interest due if she takes 28 days to pay?
  - a. \$3741.36
  - b. \$10.25
  - c. NONE
  - d. \$133.62
  
12. What is Hank's net pay if he has a gross income of \$2500.00/month, lives in Miramichi, NB, qualifies for claim code 3 and has deductions of \$70.50 for CPP, \$36.47 for EI, \$30 for provincial tax, and \$65.70 for federal tax?
  - a. \$1500.00
  - b. \$2297.33
  - c. \$2363.03
  - d. \$2393.03
  
13. Which of the following is the most appropriate Imperial units to use for measuring a person's hand width?
  - a. Centimeters
  - b. Millimeters
  - c. feet
  - d. inches

14. Convert 605 yards into feet.
- 605 feet
  - 302.5 feet
  - 1815 feet
  - 201.7 feet
15. Which measure is between 8 km and 12 km?
- 10 miles
  - 13 miles
  - 6 miles
  - 4 miles
16. A contractor is ordering concrete for the foundation footing of a new garage. The foundation footing is 18cm wide, 20 cm high and 16 m long. If concrete cost  $\$55/\text{m}^3$ , how much would it cost?
- $\$31680000$
  - $\$31.68$
  - $\$316800$
  - $\$31680$
17. Tessie measures her bathroom tiles to be 15 inches wide by 9 inches long. What is the width in centimetres?
- 35.4cm
  - 25.4 cm
  - 24.5 cm
  - 38.1cm
18. A walk-in freezer at a restaurant is kept at a temperature of  $15^\circ\text{F}$ . What is this temperature in degrees Celsius?
- $-9.4^\circ\text{C}$
  - $-23.7^\circ\text{C}$
  - $9.4^\circ\text{C}$
  - $23.7^\circ\text{C}$
19. How many ounces is 68.7 grams?
- 1951.08 oz
  - 2.4 oz
  - 195.1 oz
  - 24.0 oz
20. A seat on a ferris wheel can safely hold up to 1000 lb. If the average adult weighs 72 kg, how many passengers can ride the ferris wheel at once?
- 7
  - 5
  - 6
  - 8

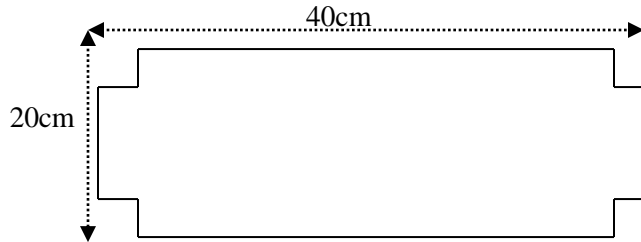
21. Samantha is buying firewood for the winter and it is being sold for  $\$250/\text{cord}$  and she estimates she will need 400kg. If the conversion factor is 370 kg/cord, how much will she spend on firewood?
- $\$270.27$
  - $\$100000$
  - $\$92500$
  - $\$2702.70$

22. Find the volume of this cone.
- $3060\text{ cm}^3$
  - $2616.67\text{ cm}^3$
  - $3060\text{ cm}^2$
  - $2616.67\text{ cm}^2$



23. Sharon is painting the living room in her house. The room measures 20 feet long by 10 feet wide by 10 feet high. She will only paint the walls and not the floor or ceiling. What is the total area Sandy will paint?
- $2000\text{ ft}^2$
  - $800\text{ ft}^2$
  - $1000\text{ ft}^2$
  - $600\text{ ft}^2$
24. A cylindrical can has a radius of 8cm and is 12cm high. What is the surface area of a label if it is wrapped around the entire can but not on the top or bottom lids?
- $301.44\text{ cm}^2$
  - $803.84\text{ cm}^2$
  - $602.88\text{ cm}^2$
  - $502.4\text{ cm}^2$

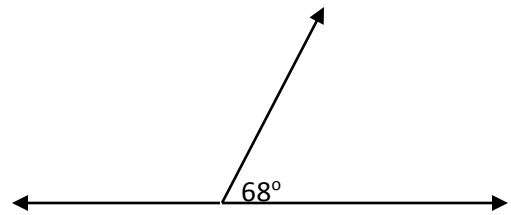
25. What would the volume of the box that would be formed with this particular net?  
(3cm squares are cut out of each corner.)



- a.  $2400 \text{ cm}^3$                       c.  $1887 \text{ cm}^3$   
b.  $1428 \text{ cm}^3$                       d.  $800 \text{ cm}^3$

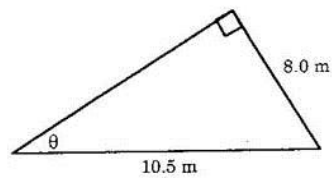
26. One **horizontal ray** is drawn. From that ray, an angle of  $\angle A$  is  $68^\circ$  is measured and a second ray is drawn. Another horizontal ray is then drawn beginning at the vertex of the  $68^\circ$  angle, as shown below. The value of the second angle created is:

- a) Complementary to the  $68^\circ$  and measures  $112^\circ$   
b) Complementary to the  $68^\circ$  and measures  $22^\circ$   
c) Supplementary to the  $68^\circ$  and measures  $112^\circ$   
d) Supplementary to the  $68^\circ$  and measures  $22^\circ$



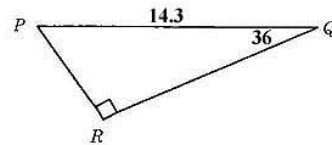
27. To the nearest degree, what is the value of  $\theta$  in the diagram?

- a.  $40^\circ$       b.  $45^\circ$       c.  $50^\circ$       d.  $53^\circ$



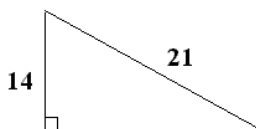
28. In the diagram shown, what is the length of **RQ** to the nearest tenth?

- a. 8.4      b. 17.7      c. 10.4      d. 11.6

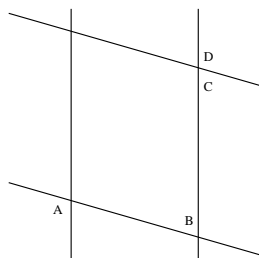


29. Find the length of the unknown side: (Round to the nearest whole number)

- a. 25      b. 15      c. 16      d. 7



30. In the diagram below, opposing lines are parallel, angles B and C are:



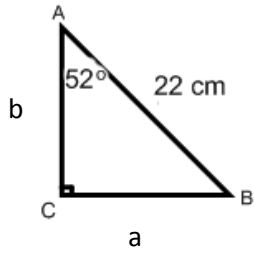
- a. Alternate exterior                      c. Corresponding  
b. Alternate interior                      d. Vertically opposite

31. A rectangular box is 180 cm long and 32 cm wide. What is the length to the nearest cm of the longest fishing rod that could be packed to lie flat in the box?

- a. 182 cm                                  c. 183 cm  
b. 177 cm                                  d. 178cm

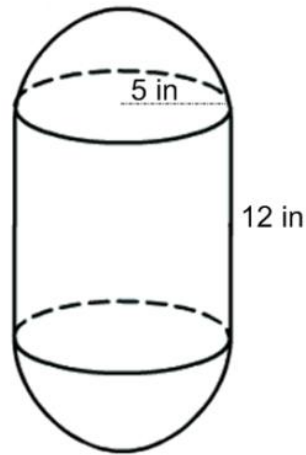


3) Solve the following right triangle...

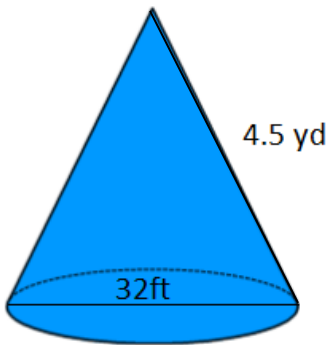


$a = \underline{\hspace{2cm}}$      $b = \underline{\hspace{2cm}}$      $\angle B = \underline{\hspace{2cm}}$

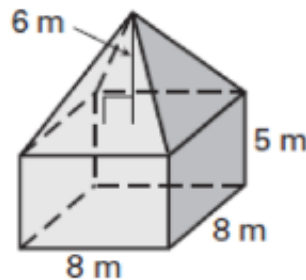
4) Calculate the volume of the following figure.



5. Calculate the **surface area** of the following using **yards**. (Include all sides.)



6) Calculate the volume, in  $\text{ft}^3$ .



7) Bob is following a recipe for pancakes that calls for 6 cups of water,  $1\frac{1}{4}$  cups of molasses, and 3.5 tsp of vanilla . **What will the total volume of the ingredients be in mL if he makes a double batch?**

8) a) Jill has to exchange \$3200 for his trip to Egypt . How much is that worth in that pound?

Canadian Bank Foreign Exchange Rates for Buying and Selling			
Country	Currency	Buying Rate	Selling Rate
France	Euro	1.580814	1.644814
Egypt	Pound	0.159300	0.217300

b) Jill's trip got cancelled and must change his money back into Canadian dollars. What does she receive back?

9) Sarah works as a LPN where she is paid \$22.30 per hour, and gets paid bi-weekly. She pays bi-weekly deductions of \$18.47 for union dues and \$32.50 for her medical plan. Knowing that she 35 hours a week, calculate her net pay using **claim code 2**.

**CPP** = \$ \_\_\_\_\_

**EI** = \$ \_\_\_\_\_

**Fed. Tax** = \$ \_\_\_\_\_ **Prov. Tax** = \$ \_\_\_\_\_

**Other** = \$ \_\_\_\_\_

**Gross Pay** = \$ \_\_\_\_\_ **Taxable Income** = \$ \_\_\_\_\_ **Net Pay** = \$ \_\_\_\_\_

10) Miss Burns has just won \$25 354.00 on Gold Rush, financial advisor gives her two investment options that she can choose from ...

**OPTION A:** 5%/a compounded quarterly

**OPTION B:** 6%/a Simple Interest

Miss Burns intends to invest the winnings for **10 years** . Determine how much money each of these investment options would be worth in 10 years, and indicate which option she should choose

**11)** Sam is planning on building a rectangular boat dock, measures 8 metres by 5 metres The lumber costs \$6.49/ft<sup>2</sup>, what will be the cost to purchase the hardwood flooring? (no Tax)

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ANSWERS:

Multiple Choice Answers:

1) c    2) a    3) a    4) d    5) a    6) c    7)b    8)a    9) b    10)c    11) b    12)b    13) d  
14) c    15)c    16)b    17)d    18)a    19)b    20)c    21)a    22)b    23)d    24)c    25)b    26) c  
27) c    28)d    29)c    30)b    31)a    32)c    33)a    34)d    35)b

Open Response answers:

1a) 10 ½    b) 3  $\frac{29}{32}$     c) 2ft 8 ¼ in    d) 5ft 10 ¾ in

2a) 1.38 mi    b) 9504 in<sup>2</sup>    c) 5481 yd<sup>3</sup>    d) 42 650.4 ft    e) 0.79 in    f) 136pint    g) 12 tbsp

h) 5.3 gal    i) 57.2 °F    j) 273.9 °C    k) 9lbs 5 oz    l) 176 oz    m) 114.4 lb    n) 9900 lbs

3)  $\angle B = 38^\circ$ , a= 17.3cm , b= 13.5cm    4) 1466.10 in<sup>3</sup>    5) 164.8 yd<sup>2</sup>    6) 15 820.4 ft<sup>3</sup>    7) 3660 ml

8a) 14726.19pounds    b) \$2345.88

9) Gross pay= \$1561    Taxable income= \$1542.53    CPP= \$70.61    EI= \$29.35    Other=\$32.50

Federal Income tax = \$232.25    Provincial Income Tax= \$140.20    Net Pay=\$ 1037.62

10) Option A: Interest= \$16 318.33    Option B: Interest = \$15 212.40    so Option A is the best option

11) \$2794.27

## Geometry, Measurement and Finance 10 – Conversions

**SI length** ←————→ **Imperial length**

1 cm = 10 mm
1 m = 100 cm
1 km = 1000 m

1 m = 1.0936 yd
1 mi. = 1.6093 km
1 in. = 2.54 cm
1 m = 3.2808 ft.

1 ft. = 12 in.
1 yd = 3 ft.
1 mi. = 1760 yd

<b>SI Capacity:</b> 1L = 1000 mL
1 kL = 1000 L
<b>SI Volume:</b> 1 cm <sup>3</sup> = 1 mL

### TEMPERATURE CONVERSIONS...

$C = \frac{5}{9}(F - 32) \quad F = \frac{9}{5}C + 32$
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**SI mass** ←————→ **Imperial mass**

1 g = 1000 mg	1 kg = 2.2 lbs	1 lb = 16 oz
1 kg = 1000 g	28.4 g = 1 oz	1 tn = 2000 lb
1 t = 1000 kg		

### Converting Common Cooking Units

<i>Imperial</i>	<i>SI</i>
1/4 teaspoon	1.25 mL
1/2 teaspoon	2.5 mL
1 teaspoon	5 mL
1 tablespoon (3 teaspoons)	15 mL
1 cup	250 mL
1 pint	568.2614 mL
1 quart (2 pt)	1.1365 L
1 gallon (4 qt)	4.5461 L

<i>US Imperial</i>	<i>SI</i>
1 fl oz	29.5735 mL
1 pt = 16 fl oz	473.176 mL or 0.473 L
1 qt = 2 pt	946.352 mL or 0.946 L
1 gal = 4 qt	3785.4 mL or 3.785 L

## Geometry, Measurement and Finance 10 – Formulas

### Area of 2-D shapes

$$A_{\text{rectangle}} = lw$$

$$A_{\text{triangle}} = \frac{bh}{2}$$

$$A_{\text{circle}} = \pi r^2$$

$$\text{Circumference} = 2\pi r \text{ or } \pi d$$

$$A_{\text{trapezoid}} = \frac{h(a+b)}{2}$$

### Surface Area and Volume of 3-D objects

$$SA_{\text{prism}} = \text{Add area of all the faces}$$

$$V_{\text{prism or cylinder}} = A_{\text{base}} \times h$$

$$SA_{\text{cylinder}} = 2\pi r^2 + 2\pi rh$$

$$V_{\text{cone or pyramid}} = \frac{A_{\text{base}} \times h}{3}$$

$$SA_{\text{cone}} = \pi r^2 + \pi rs$$

$$V_{\text{sphere}} = \frac{4}{3}\pi r^3$$

$$SA_{\text{pyramid}} = A_{\text{base}} + (\text{area of the triangular faces})$$

$$SA_{\text{sphere}} = 4\pi r^2$$

### Trigonometry

$$c^2 = a^2 + b^2$$

$$\sin\theta = \frac{\text{opp}}{\text{hyp}}$$

$$\cos\theta = \frac{\text{adj}}{\text{hyp}}$$

$$\tan\theta = \frac{\text{opp}}{\text{adj}}$$

### Finance

$$\text{CPP: } [\text{Gross} - (3500 / \# \text{pay})] \times 0.0495$$

$$\text{EI: } 1.88\% \text{ of gross}$$

$$\text{Simple Interest: } I = Prt \quad \& \quad A = P + I$$

$$\text{Compound Interest: } A = P\left(1 + \frac{r}{n}\right)^{nt} \quad \& \quad I = A - P$$