

Practice Examination
January 2011
Grade 9 Applied Mathematics

Part A: Multiple Choice: Circle the correct answer for each of the following multiple choice questions.

1. The volume of a cone is _____ the volume of a cylinder of the same height and radius.
a. three times b. half c. double d. a third
2. What is the volume of a sphere with radius 4cm?
a. 300 cm^2 b. 267 cm^2 c. 100 cm^2 d. 220 cm^2
3. The _____ variable is place on the x axis.
a. dependent b. a curve of best fit c. an outlier d. independent
4. On a scatter plot, a series of points in a line rising to the right are considered to be a _____ trend.
a. continuous b. negative c. positive d. simple
5. Using a line of best fit to make predictions inside of the given range of data is called _____.
a. interpolating b. trending c. extrapolating d. dependent
6. Which equation best represents a club membership costing \$50 per month plus a one time \$200 fee to join.
a. $C=50n+200$ b. $C=200n+50$ c. $C=200n+50m$ d. $C=150n+200$
7. If 20 timbits cost \$2.59, what is the cost per timbit?
a. \$0.67 b. \$0.45 c. \$0.13 d. \$0.02
8. Which of the following is an equivalent ratio to 2:100?
a. 1:25 b. 2: 70 c. 4:200 d. 2:3

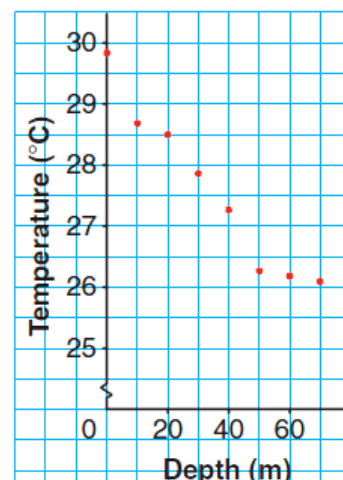
Part B: Full Solutions

For each of the following, read the questions carefully and show your calculations as required.

1. The questions below refer to the graph to the right

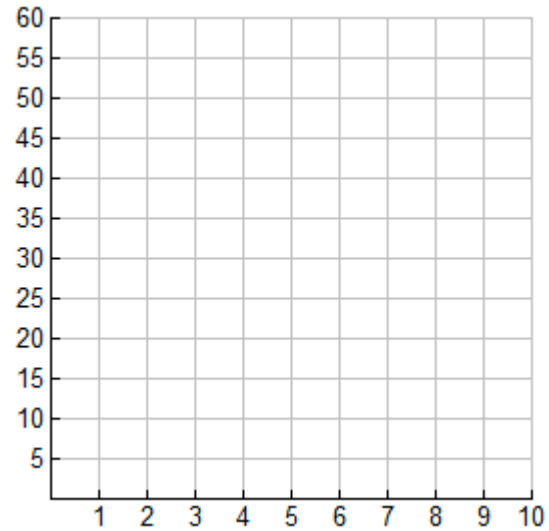
- a. Draw a line of best using the 3 rules.
- b. According to your line of best fit, what is the temperature of the lake at 50m deep?
- c. According to your line of best fit, at what depth is the lake 29 degrees Celsius?
- d. Is question 7 an example of extrapolation or interpolation? Why?

**Water Temperature and
Depth in Lake Turkana**



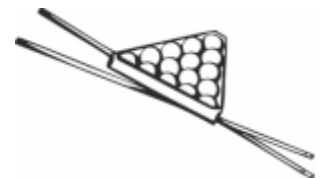
2. A pool hall charges players a one time fee of \$10 to join the hall and \$5 for every hour they play.
- Make a table of values for up to 6 hours played.
 - Graph the relationship including all labels.

Hours (h)	Total Cost (C)
0	
1	
2	
3	
4	
5	
6	



- Does this relation represent a partial or direct variation? Explain.
- Write an equation to model the relationship.

- Use your equation** to determine how much it would cost to play 10 hours.



- If a person only has a \$60 budget, how long can the person play? (Show your work on the graph)

3. **Given 16m of fencing you are asked to create a rectangular enclosure for the Guinea Pigs at a local pet store.**

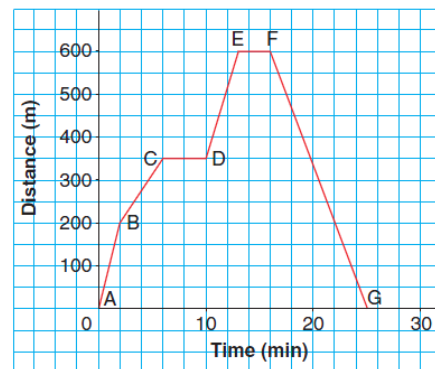
a. If the enclosure is to have 4 sides bound by fencing, draw the rectangle with the largest area possible and then state the dimensions and the maximum area that can be enclosed.

Sketch	Dimensions
	Maximum Area

- b. Complete the following statement. "A 4 sided rectangular enclosure has a maximum area when the rectangle is a _____."

4. **Use the time distance graph to the right to answer the following.**

- a. What was happening in section EF?
 b. Was the person travelling faster in AB or BC? How do you know?
 c. How fast (m/min) was the person travelling in section BC?



5. **Simplify each of the following by collecting like terms.**

a. $(5x^2 - 4x - 7) + (2x^2 + 2x - 1)$ b. $(-3x^2 + 2x + 1) - (4x^2 + 2x + 7)$

6. **Use the distributive law to simplify the following.**

a. $4(2x - 1)$ b. $-2x(x - 3)$ c. $2x(4x^2 - 2x + 1)$

7. **Solve each of the following for the unknown variable. (Use good form)**

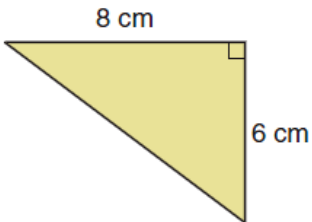
a. $\frac{1}{3}x + 2 = 6$ b. $2n - 3 = 12 - n$ c. $-2x - 10 = 2 - 5x$

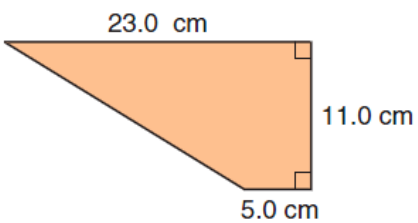
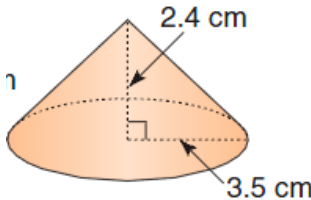
8. The driving distance from point A to point B on a map is 7cm, in reality this is a distance of 90km. On the same map, the distance from Point B to point C is approximately 10cm. Use cross multiplication to determine the actual distance in km from Point B to Point C.

9. Joe wants to purchase a new TV that regularly cost \$867. If the store is having a 25% off sale determine each of the following.

a. What is the discounted price of TV?	b. What is the total price of the discounted TV including 13% HST?
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10. Determine the length of the unknown side using the Pythagorean Theorem.



11. Determine the total area of the figure below. 	12. Determine the volume of the cone shown. 
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BEST OF LUCK ON YOUR REAL EXAMINATION

A MEASUREMENT FORMULA SHEET WILL BE PROVIDED FOR YOUR EXAM