

## Intermediate Mathematics Provincial Assessment 2009

Last Name: \_\_\_\_\_ First Name: \_\_\_\_\_ MI: \_\_\_\_\_

Teacher: \_\_\_\_\_

School: \_\_\_\_\_ School District: \_\_\_\_\_

### IMPORTANT

You will have to complete your name and school information in four places:

- (1) On Section 1 and 2
- (2) On the bubble sheet
- (3) On the cover of your Student Booklet

Please ensure the information in each of these places is completed correctly and clearly.

## Section 2: Written Response Questions

You will need a pencil, paper, and ruler for this section. You are permitted the use of a calculator.

Questions, 8-11 require you to write, draw, or graph your responses in the space provided in this booklet. Do not use your bubble sheet for these questions. Section 2 should take about 20 minutes.

Your teacher will collect Section 2 when everyone is finished and will then give you Section 3 (a larger work booklet containing the rest of the questions). You will need your bubble sheet for Section 3.

### Formulae

Volume of a Cone:  $V = \frac{1}{3}\pi r^2 h$

Volume of a Sphere:  $V = \frac{4}{3}\pi r^3$

Volume of a Cylinder:  $V = \pi r^2 h$

Surface Area of a Sphere:  $SA = 4\pi r^2$

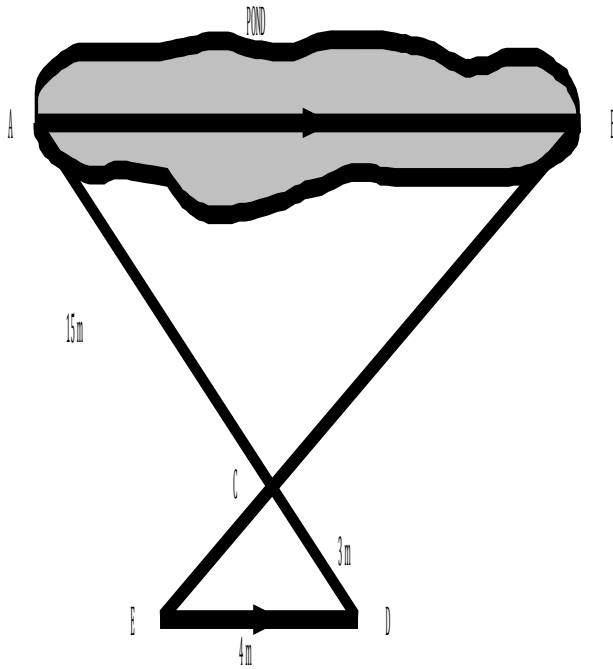
Surface Area of a Cone:  $SA = \pi r^2 + \pi r s$

Slant Height of a Cone:  $r^2 + h^2 = s^2$

Please note that all formulae may not be needed on any given assessment.

**Section 2 Insert**

8. Alice marked out the following triangles to determine the length of the pond,  $\overline{AB}$ .



(A) Write a similarity relation.

(B) Create and solve an equation to determine the length of the pond,  $\overline{AB}$ .

\_\_\_ out of 3 marks

9. Sam walks toward a motion sensor.

The distance from the sensor is determined by the equation

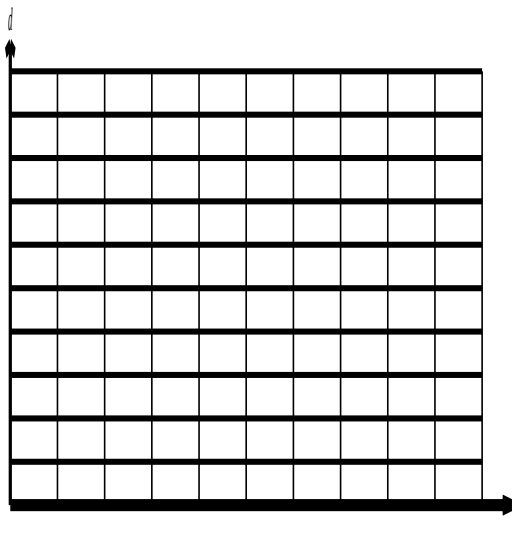
$$d = -2t + 8$$

where  $d$  represents distance in metres and  $t$  represents time in seconds.

(A) Complete the table of values.

Time (s)	0	1	2	3	4
Distance (m)					

(B) Graph the information from the above table.



(C) What is the  $d$ -intercept and what does it represent?

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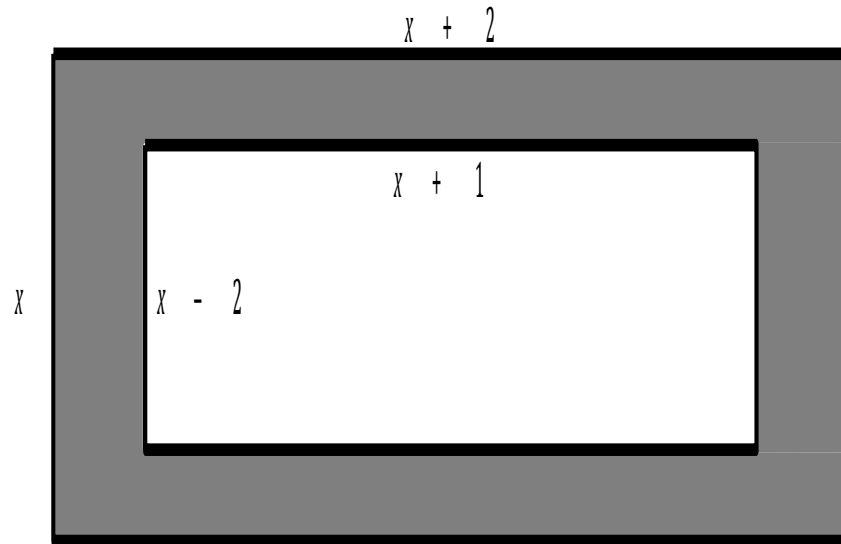
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\_\_\_ out of 3 marks

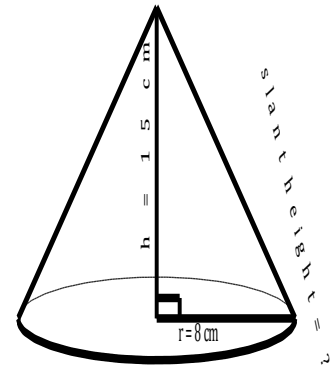
10. Determine the area of the shaded region for the figure shown in simplest form.



\_\_\_ out of 3 marks

11. Wax is melted to form a cone-shaped candle with a radius of 8 cm and a height of 15 cm.

(A) Calculate the slant height.



(B) Determine how much wrapping material is needed to completely cover the candle if there is no overlap (to the nearest  $\text{cm}^2$ ).  
Use  $\pi = 3.14$ .

\_\_\_ out of 3 marks