

Sample Assessment Booklet: New Layout  
Booklet 1

# QUESTIONS

Grade 9 Assessment of Mathematics • Academic

2015

Follow along as your teacher reads the instructions below.

Along with this booklet, make sure you have *Answer Booklet 1* and the Formula Sheet.

You may use any space in this book for rough work for multiple-choice questions only.

**Note:**

The diagrams in these booklets are **not** all drawn to scale. The use of cellphones, audio- or video-recording devices, digital music players or e-mail or text messaging devices during the assessment is prohibited.

No work in this booklet  
will be scored.

Continue to follow along as your teacher reads the directions on the cover of *Answer Booklet 1*.

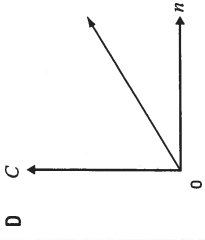
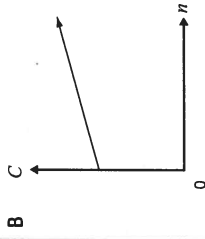
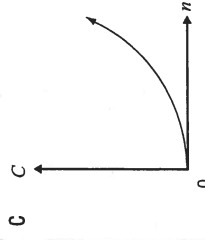
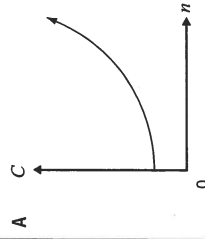
Multiple-Choice



Remember to write your answers in your *Answer Booklet 1*.

- 1 The total yearly cost of a museum membership is made up of a fee of \$25, plus \$5 per visit.

Which graph best represents the relationship between total yearly cost,  $C$ , and number of visits,  $n$ ?



2 A cellphone company offers four choices for purchasing talk time. Which of the following has the lowest cost per minute?

- F 200 minutes for \$24.50
- G 550 minutes for \$68.00
- H 700 minutes for \$80.25
- J 850 minutes for \$99.50

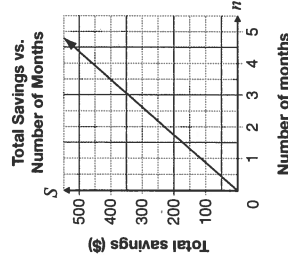
3 The table below shows information about the linear relationship between Ben's total savings and the number of months he saves money.

Number of months, $n$	Total savings, $S$ (\$)
3	345
6	540
9	735
12	930

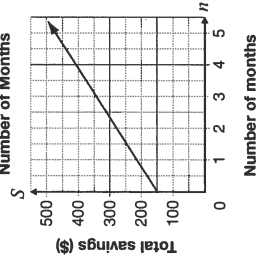
Which of the following represents this relationship?

- A  $S = 65n + 345$
- B  $S = 195n + 150$

C



D



4 Jared uses the equation  $C = 30n$  to determine the cost,  $C$ , in dollars, for renting a car for  $n$  days, where  $n$  is a whole number.

If Jared can spend a maximum of \$200 on the rental, which of the following describes the possible values of  $n$ ?

- F 7, 8, 9, ...
- G 6, 7, 8, 9, ...
- H 0, 1, 2, 3, 4, 5, 6
- J 0, 1, 2, 3, 4, 5, 6, 7

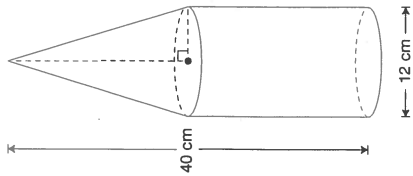
5 What goes in the  $\square$  to complete the equation below?

$$(8x^3)(\square) = 24x^{12}$$

- A  $3x^9$
- B  $3x^4$
- C  $16x^9$
- D  $16x^4$

**Multiple-Choice**

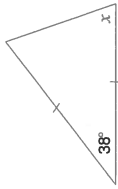
**6** The container pictured below is made up of a cone and a cylinder. The cone and the cylinder have the same height.



Which of the following is closest to the volume of the container?

- F 2261 cm<sup>3</sup>
- G 3016 cm<sup>3</sup>
- H 3393 cm<sup>3</sup>
- J 4524 cm<sup>3</sup>

**7** What is the value of  $x$  in the diagram below?



- A 38°
- B 71°
- C 104°
- D 161°

**Open-Response**



Go to **Answer Booklet 1** and complete the four open-response questions before continuing with question 12.

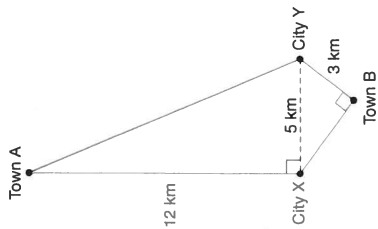
- 8** Open-Response
- 9** Open-Response
- 10** Open-Response
- 11** Open-Response

**Multiple-Choice**

**12** The equation of a line is  $5x - 2y + 10 = 0$ . Which of the following expresses this equation in the form  $y = mx + b$ ?

- F  $y = \frac{5}{2}x + 5$
- G  $y = \frac{5}{2}x + 10$
- H  $y = -\frac{5}{2}x + 5$
- J  $y = -\frac{5}{2}x + 10$

- 13** The 5 km of highway between City X and City Y is closed. There are two possible detour routes: one through Town A and one through Town B, as shown in the diagram below.



How much shorter is the detour through Town B than the detour through Town A?

- A 7 km
- B 9 km
- C 16 km
- D 18 km

- 14** Which of the following shows data from a non-linear relation?

**F**

$n$	$P$
1	8
2	5
3	2
4	-1

**G**

$n$	$P$
5	3.25
10	4.00
15	4.75
20	5.50

**H**

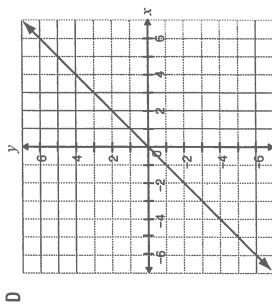
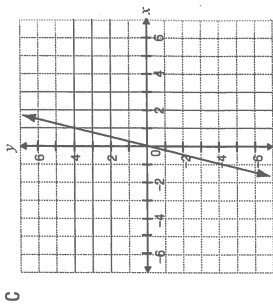
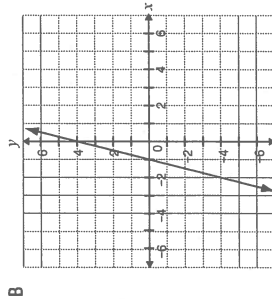
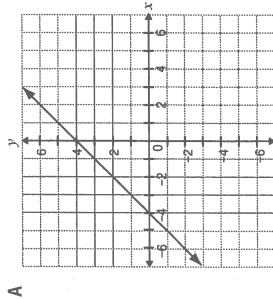
$n$	$P$
2	8
4	$8\frac{1}{3}$
6	$8\frac{2}{3}$
8	9

**J**

$n$	$P$
3	25
6	16
9	9
12	4

- 15** Consider the line represented by the equation  $y = 3x + 2$ . A new line is formed by decreasing the slope and increasing the y-intercept.

Which of the following could be the graph of the new line?



**Multiple-Choice**

**16** The sum of the interior angles of a polygon is  $2700^\circ$ .

How many sides does the polygon have?

- F 19
- G 17
- H 15
- J 13

**17** Gertrude sells shoes.

Her total pay each week is made up of a base salary and a commission of 15% of her sales that week.

One week, her total pay is \$167.50 and she has \$850 in sales.

Which equation below represents the relationship between her total pay,  $P$ , each week and sales,  $s$ ?

- A  $P = 15s$
- B  $P = 40 + 0.15s$
- C  $P = 850 + 0.15s$
- D  $P = 167.50 + 0.15s$

**18** What is the value of  $x$  in the equation

$$-4(2x - 1) = 36?$$

- F -4
- G  $-\frac{35}{8}$
- H  $-\frac{37}{8}$
- J -5



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# ANSWERS

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## DIRECTIONS

### Answering Multiple-Choice Questions

Answer all multiple-choice questions. If you fill in more than one answer to a question, or leave a question blank, the question will be scored zero. Incorrect answers will also be scored zero.

### Answering Open-Response Questions

Do all of your work for each question in the space provided for the question only. Work on additional or other pages will not be scored.

Write your solutions, including all calculations, clearly and completely, as they will be scored by someone who does not know your work. Your teacher may also mark some or all of your work.

**Record ALL  
your answers to  
multiple-choice and  
open-response questions  
in this booklet.**

Education Quality and  
Accountability Office  
**EQAO**

You are now ready to start  
the assessment.

## Multiple-Choice

page 2



Please read the questions in *Question Booklet 1*;  
then fill in your answers below.

To indicate your answer, use a pencil to fill in the appropriate circle below completely.

Like this: ●

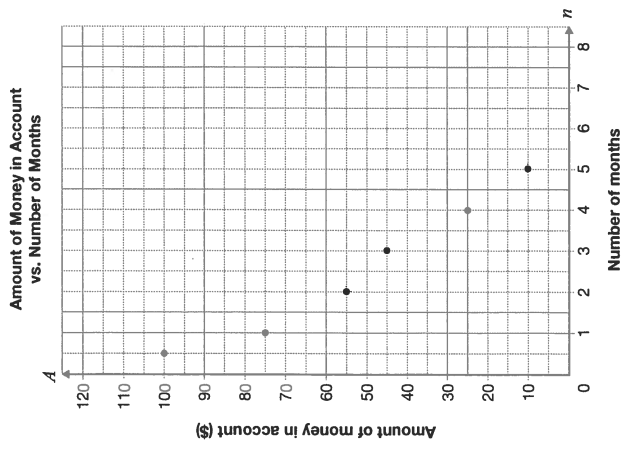
Not like this: ⊗ ⊙ ⊚

Cleanly erase your answer if you wish to change it and fill in the circle for your new answer.  
Fill in only **one** circle for each question.

- 1  A  B  C  D
- 2  E  F  G  H
- 3  I  J  K  L
- 4  M  N  O  P
- 5  Q  R  S  T
- 6  U  V  W  X
- 7  Y  Z  A  B

**B More Money, Please!**

The graph below shows information about the amount of money,  $A$ , in Shreya's bank account and the number of months,  $n$ , she has had the account.

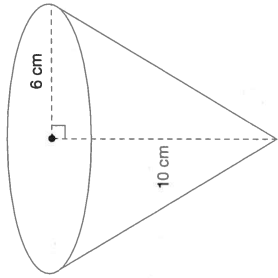


Draw the line of best fit for the data.  
Determine the equation of your line of best fit.

Show your work.

**9 Coated Cones**

An ice cream store offers chocolate-coated cones as shown in the diagram below.



The cone is open topped, and the entire outside is coated in chocolate.  
Determine the area of the surface that is coated in chocolate.  
Show your work.

### 10 Share the Profits

Three partners, Luc, Deborah and Melanie, share the profits of a business in the ratio 2:3:7 respectively.

The profit for this year is \$176 496.

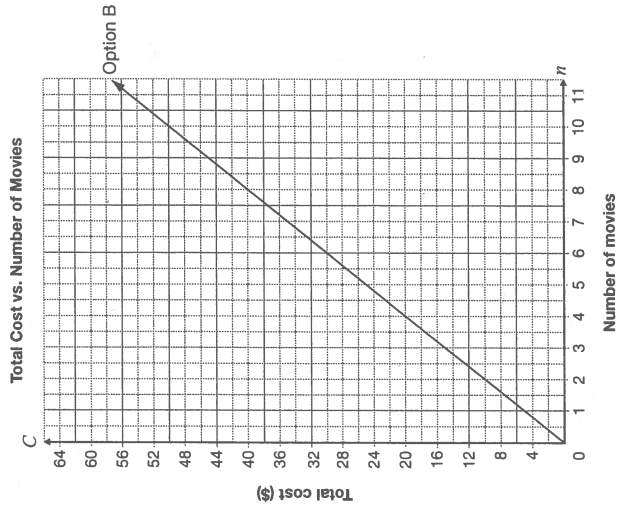
Determine the share of the profit for each partner.

Show your work

### 10 Movie Night

There are two payment options for downloading movies from a Web site.

- Option A: Pay \$30 for a membership and \$2 per movie downloaded.
- Option B: Shown on the grid below.



Determine under which conditions a person should select Option A and under which conditions a person should select Option B.

Justify your answer.





Please read the questions in **Question Booklet 1**;  
then fill in your answers below.

To indicate your answer, use a pencil to fill in the appropriate circle below completely.

Like this: ●

Not like this: ⊗   ⊗   ●   ●

Cleanly erase your answer if you wish to change it and fill in the circle for your new answer.

Fill in only **one** circle for each question.

- 12 ○ ○ ○ ○ ○
- 13 ○ ○ ○ ○ ○
- 14 ○ ○ ○ ○ ○
- 15 ○ ○ ○ ○ ○
- 16 ○ ○ ○ ○ ○
- 17 ○ ○ ○ ○ ○
- 18 ○ ○ ○ ○ ○

