

# Released Assessment Questions, 2016

# QUESTIONS

Grade 9 Assessment of Mathematics • Applied

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**Read the instructions below.**

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

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

The diagrams in these booklets are **not** all drawn to scale.

**ATTENTION:**

Unlike in the actual assessment booklet, the questions in this booklet are sorted by strand.

There are more multiple-choice questions in this booklet than in a regular booklet.

Continue to read the directions on the cover of the *Answer Booklet*.

Education Quality and  
Accountability Office





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

- 1** The cost of granola bars at two different stores is shown below.

Food-O-Rama	Groceryland
Box of 12 granola bars \$7.44	Each box has 5 granola bars 2 boxes for \$6.00

What is the difference in the cost per granola bar at these two stores?

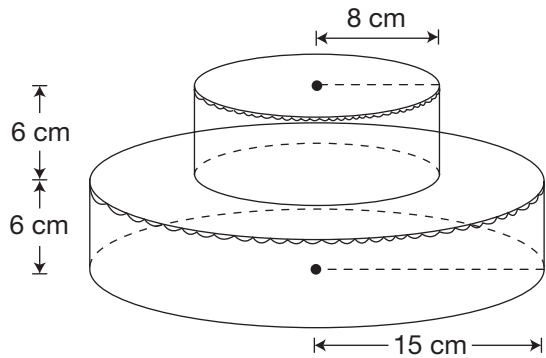
- a 2¢  
b 6¢  
c 58¢  
d 62¢
- 2** Cornerstone High School has 1860 students.
- 45% of the students bike or walk to school.
  - 372 students drive to school.
  - The remaining students travel to school by bus.
- How many students travel to school by bus?
- a 651  
b 837  
c 1209  
d 1443

- 3** What value of  $x$  makes the following equation true?

$$\sqrt{x} = 16$$

- a 4  
b 8  
c 32  
d 256

- 4** A cake is made of two cylindrical layers of ice cream stacked on top of each other as pictured below.



The formula for the volume of **one** layer of this cake,  $V$ , is

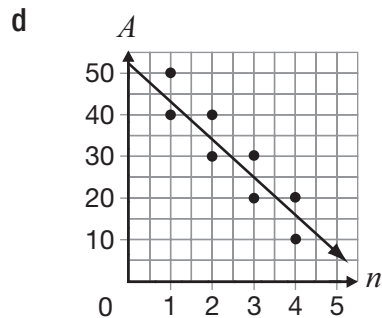
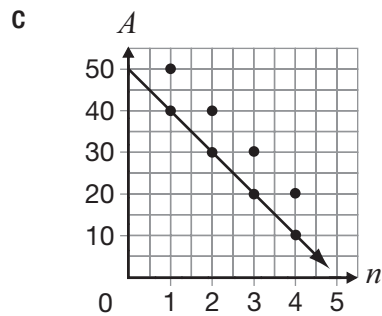
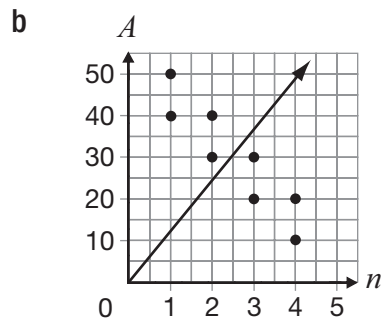
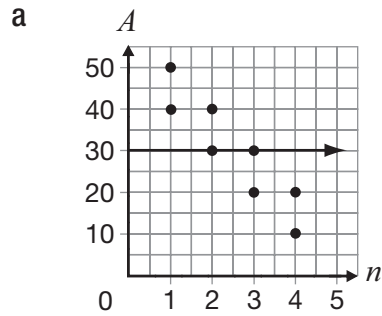
$$V = \pi r^2 h,$$

where  $r$  is the radius of the layer and  $h$  is the height of the layer.

Which of the following is closest to the total volume of ice cream needed to make the **two** layers of this cake?

- a 434 cm<sup>3</sup>
- b 867 cm<sup>3</sup>
- c 5448 cm<sup>3</sup>
- d 17 114 cm<sup>3</sup>

- 5** Which of the following shows an appropriate line of best fit for the data?



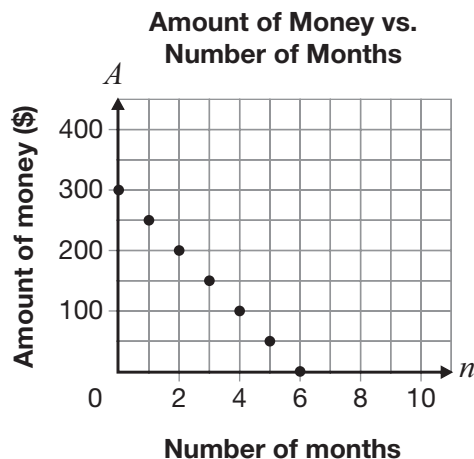
- 6** The temperatures at 2 a.m. and 4 a.m. on a winter day are recorded in the table.

Time	Temperature (°C)
2 a.m.	-8
3 a.m.	?
4 a.m.	-2
5 a.m.	?

If the relationship between temperature and time is linear, what are the temperatures at 3 a.m. and 5 a.m.?

- a -4 °C and 0 °C
- b -4 °C and 2 °C
- c -5 °C and 1 °C
- d -5 °C and 5 °C

- 7** Information about the amount of money Aamari has left at the end of each month is shown by the graph.



Aamari started with \$300 and spent the same amount each month. He reached \$0 after 6 months.

If Aamari had spent \$100 **more** per month, and had started with \$300, when would he have reached \$0?

- a 2 months
- b 3 months
- c 6 months
- d 8 months

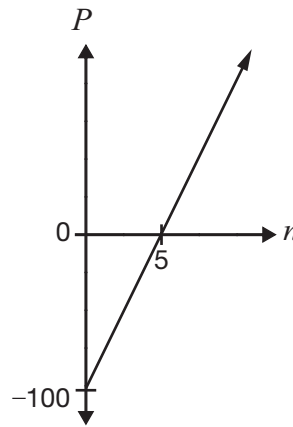
**8** Information about four different linear relationships is given below.

<p><b>Equation:</b></p> $K = 2n + 7$	<p><b>Description:</b></p> <p>The total cost to print T-shirts is made up of a set-up fee of \$65 and a cost of \$7 per T-shirt.</p>								
<p><b>Table:</b></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th><i>h</i></th> <th><i>T</i></th> </tr> </thead> <tbody> <tr> <td>0</td> <td>10</td> </tr> <tr> <td>1</td> <td>17</td> </tr> <tr> <td>2</td> <td>24</td> </tr> </tbody> </table>	<i>h</i>	<i>T</i>	0	10	1	17	2	24	<p><b>Graph:</b></p>
<i>h</i>	<i>T</i>								
0	10								
1	17								
2	24								

Which two of these linear relationships have a rate of change of 7?

- a “Table” and “Graph”
- b “Table” and “Description”
- c “Equation” and “Graph”
- d “Equation” and “Description”

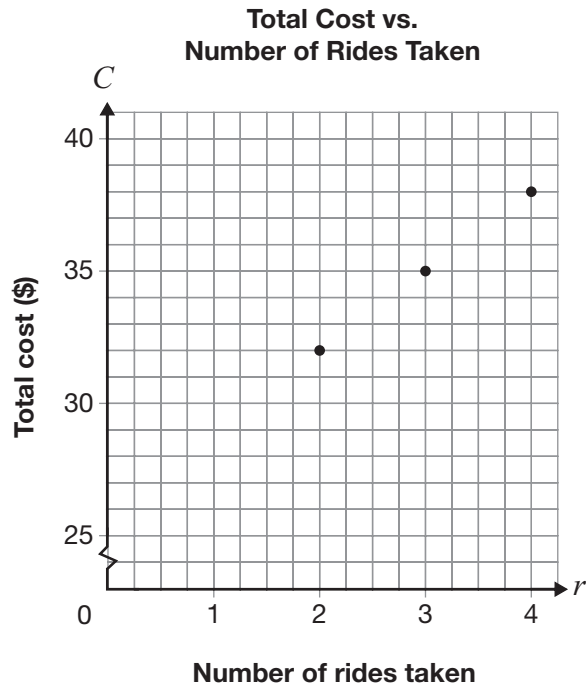
**9** Joel has a summer job cutting lawns. The relationship between his profit,  $P$ , in dollars, and the number of lawns cut,  $n$ , is shown by the graph below.



What type of variation is the relationship, and what is its initial value?

- a a direct variation with an initial value of \$5
- b a direct variation with an initial value of -\$100
- c a partial variation with an initial value of \$5
- d a partial variation with an initial value of -\$100

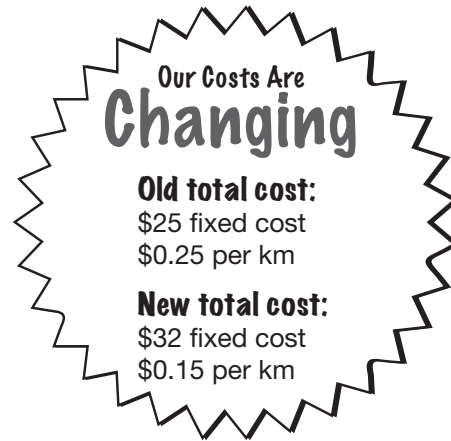
- 10** The graph below represents information about the linear relationship between the total cost of a day at the fair and the number of rides taken.



Which of the following equations represents the relationship between  $C$  and  $r$ ?

- a  $C = 3r$
- b  $C = 9.5r$
- c  $C = 0.75r + 26$
- d  $C = 3r + 26$

- 11** Enviro-Car rents vehicles. The company is advertising a change in its total costs as shown below.



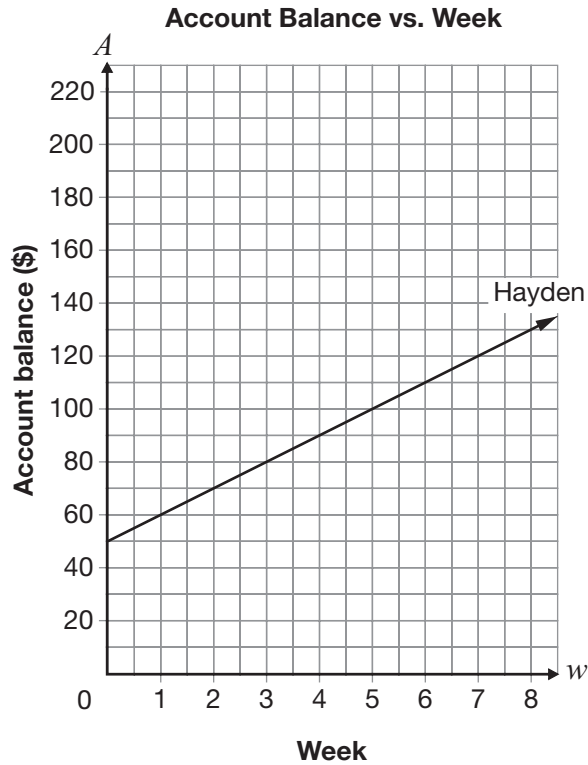
Enviro-Car plans to graph the relationship between the total cost,  $C$ , and number of kilometres,  $n$ , for both total costs.

How will the graph of the new total cost be different from the graph of the old total cost?

The graph of the new total cost will be

- a steeper and start higher on the  $C$ -axis.
- b steeper and start lower on the  $C$ -axis.
- c less steep and start higher on the  $C$ -axis.
- d less steep and start lower on the  $C$ -axis.

- 12** Ariel and Hayden each have money in a bank account that does not give any interest. Hayden’s weekly account balance is shown by the graph below.



Ariel starts with \$200 in her account and spends \$20 each week, without making any deposits.

Which of the following is true?

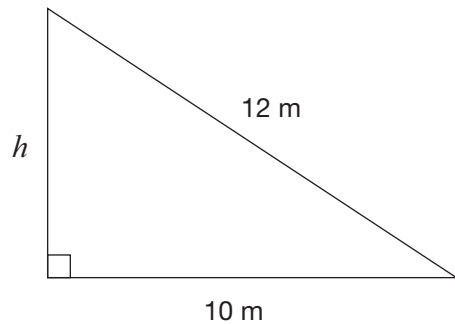
- a Hayden will have less money in his account than Ariel in Week 5.
- b Hayden will always have more money in his account than Ariel.
- c Ariel starts with less money in her account than Hayden.
- d Ariel has more money in her account than Hayden in Week 4.



Go to the *Answer Booklet* and complete the six open-response questions before continuing with question 19.

- 13** Open-Response
- 14** Open-Response
- 15** Open-Response
- 16** Open-Response
- 17** Open-Response
- 18** Open-Response

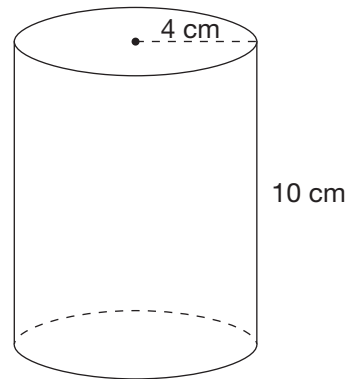
- 19** The ramp pictured below is 12 m long and has a base of 10 m.



Which of the following is closest to the height,  $h$ , of the ramp?

- a 2 m
- b 7 m
- c 16 m
- d 22 m

- 20** Orange Dream sells drinks in two sizes of cylindrical cans. The smaller can is pictured below.



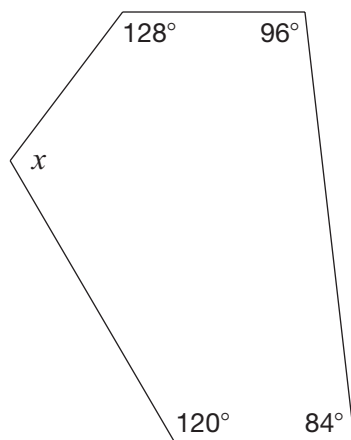
The larger can has the same height and a radius that is triple the radius of the smaller can.

How many times larger is the volume of the larger can than that of the smaller can?

- a 3 times larger
- b 9 times larger
- c 12 times larger
- d 27 times larger

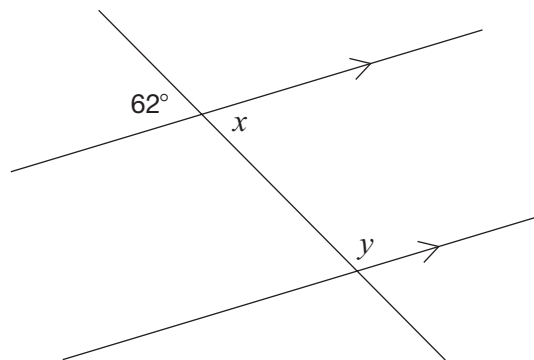


**21** What is the value of  $x$  in the diagram below?



- a  $60^\circ$
- b  $68^\circ$
- c  $112^\circ$
- d  $128^\circ$

**22** What are the values of  $x$  and  $y$  in the diagram below?



- a  $x = 62^\circ, y = 62^\circ$
- b  $x = 62^\circ, y = 118^\circ$
- c  $x = 118^\circ, y = 118^\circ$
- d  $x = 118^\circ, y = 62^\circ$