

Released Assessment Questions, 2016

QUESTIONS

Grade 9 Assessment of Mathematics • Academic

Read the instructions below.

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*.

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

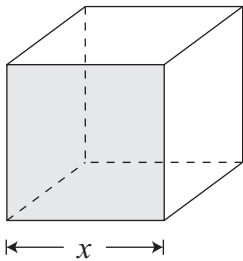
- 1** A ball is dropped from a height of 25 m. The ball's height, H , in metres, after n bounces is represented by the equation below.

$$H = 25\left(\frac{1}{2}\right)^n$$

What is the height of the ball after 4 bounces?

- a $\frac{25}{16}$ m
- b $\frac{25}{8}$ m
- c $\frac{25}{4}$ m
- d $\frac{25}{2}$ m

- 2** A cube with a given side length is pictured below.



Which algebraic expression represents the area of **one face** of the cube?

- a $2x$
- b $4x$
- c x^2
- d x^3

- 3** A school is planning a car wash to raise \$600.

- There will be 8 teams.
- Each team will wash 2 cars per hour.
- The car wash will last $5\frac{1}{2}$ hours.
- Each team will take two 15-minute breaks.

How much should the school charge per car to raise exactly \$600?

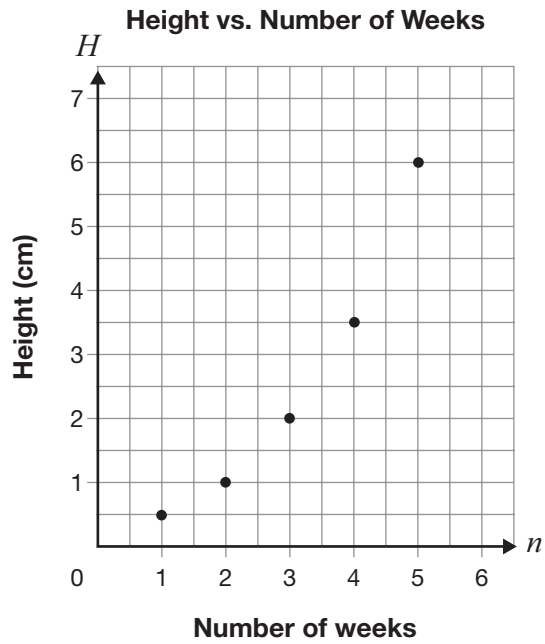
- a \$15.00
- b \$7.50
- c \$6.82
- d \$6.25

- 4** Which of the following is equivalent to

$$3(5x - 1) - 2(3x + 5)?$$

- a $9x - 13$
- b $9x + 4$
- c $21x - 13$
- d $21x + 4$

- 5 Information about the relationship between the height of a plant and time is shown on the grid below.



Which table of values shows only information about this relationship?

a

| Number of weeks | Height (cm) |
|-----------------|-------------|
| 1 | 2 |
| 2 | 3 |
| 6 | 5 |

b

| Number of weeks | Height (cm) |
|-----------------|-------------|
| 2 | 1 |
| 3 | 2 |
| 5 | 6 |

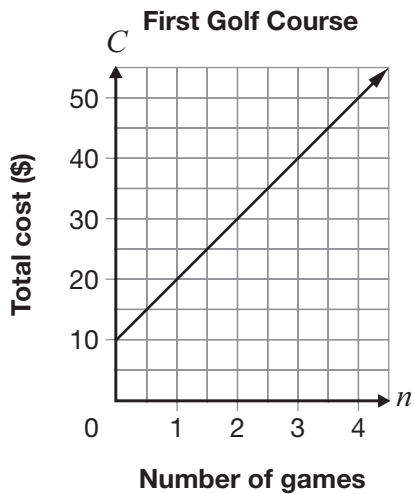
c

| Number of weeks | Height (cm) |
|-----------------|-------------|
| 1 | 1 |
| 2 | 2 |
| 4 | 7 |

d

| Number of weeks | Height (cm) |
|-----------------|-------------|
| 2 | 1 |
| 3 | 2 |
| 4 | 4 |

6 Two golf courses offer student memberships. Information about the linear relationships between the total cost, C , in dollars, and the number of games played, n , at these two golf courses is given below.



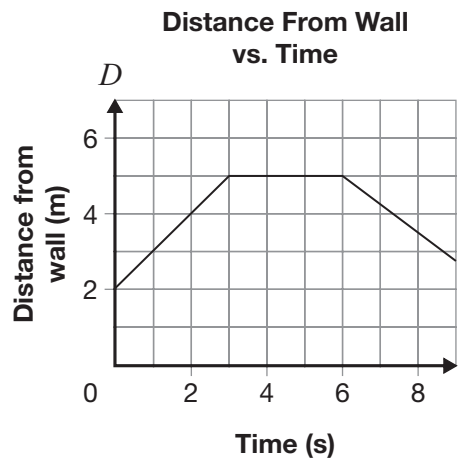
Second Golf Course

| Number of games, n | Total cost, C (\$) |
|----------------------|----------------------|
| 3 | 51 |
| 5 | 85 |
| 9 | 153 |
| 12 | 204 |

Which of the following statements correctly describes the two relationships?

- a They are both direct variations.
- b The first is a direct variation, and the second is a partial variation with an initial value of \$17.
- c The first is a partial variation with an initial value of \$10, and the second is a direct variation.
- d The first is a partial variation with an initial value of \$10, and the second is a partial variation with an initial value of \$17.

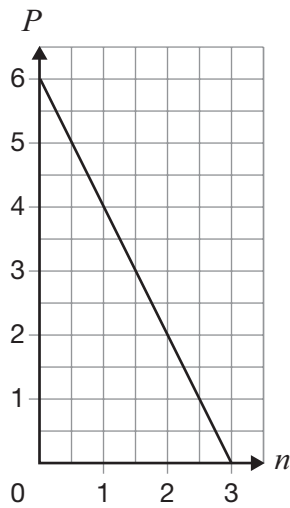
7 The graph below represents Joe’s distance from a wall as he walks.



Which statement could describe Joe’s walk?

- a Joe walks toward the wall, stands still and then walks away from the wall.
- b Joe walks away from the wall, stands still and then walks toward the wall.
- c Joe walks toward the wall, stands still and then continues to walk toward the wall.
- d Joe walks away from the wall, stands still and then continues to walk away from the wall.

- 8** Consider the graph below.



Which of the following is an equation representing this graph?

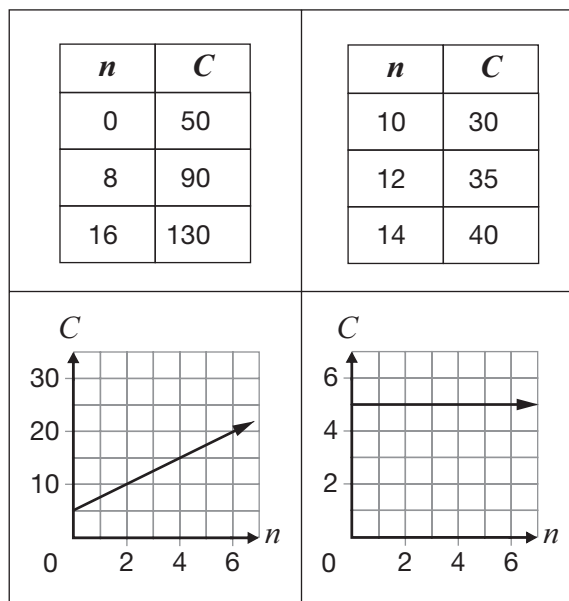
- a $P = 2n + 6$
- b $P = \frac{1}{2}n + 6$
- c $P = -2n + 6$
- d $P = -\frac{1}{2}n + 6$



Go to the *Answer Booklet* and complete the six open-response questions before continuing with question 15.

- 9** Open-Response
- 10** Open-Response
- 11** Open-Response
- 12** Open-Response
- 13** Open-Response
- 14** Open-Response

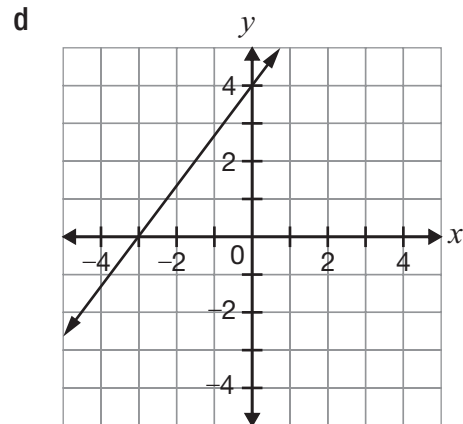
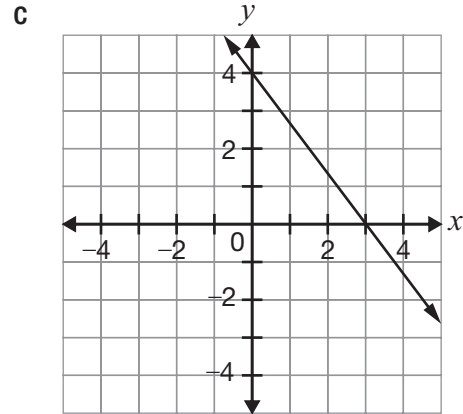
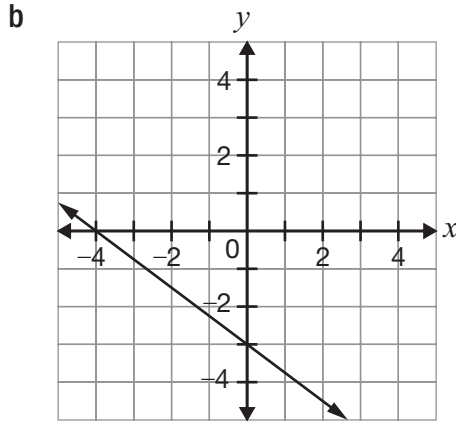
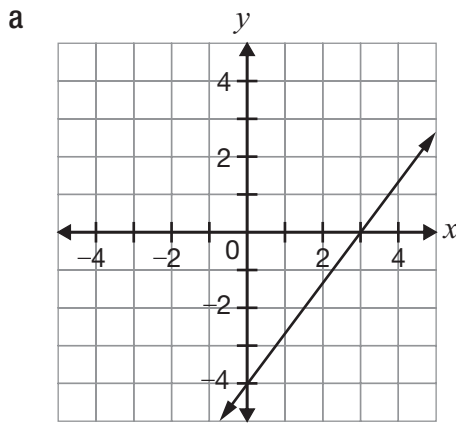
15 Information about four different linear relationships between C and n is shown below.



How many of the linear relationships have a rate of change of 5?

- a 4
- b 3
- c 2
- d 1

16 Which graph shows a line that is perpendicular to the line $y = \frac{4}{3}x - 4$?



- 17** What is an equation of the line
- perpendicular to the line represented by $y = -\frac{3}{2}x + 1$ and
 - with the same y -intercept as the line represented by $y = 7 + 5x$?

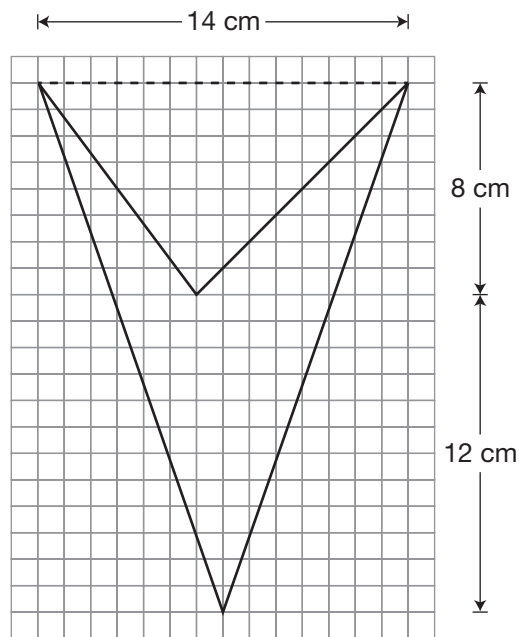
- a** $y = \frac{2}{3}x + 7$
- b** $y = \frac{2}{3}x + 5$
- c** $y = -\frac{2}{3}x + 7$
- d** $y = -\frac{2}{3}x + 5$

- 18** The total cost to repair a fridge, C , in dollars, can be represented by the equation $C = 60t + 30$, where t is the repair time in hours.

Which of the following statements is true about this relationship?

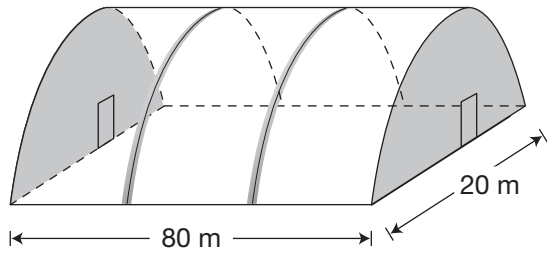
- a** The hourly rate is \$90.
- b** The fixed fee is \$90.
- c** The hourly rate is \$60, and the fixed fee is \$30.
- d** The hourly rate is \$30, and the fixed fee is \$60.

- 19** What is the area of the shape represented below?



- a** 28 cm^2
- b** 56 cm^2
- c** 84 cm^2
- d** 168 cm^2

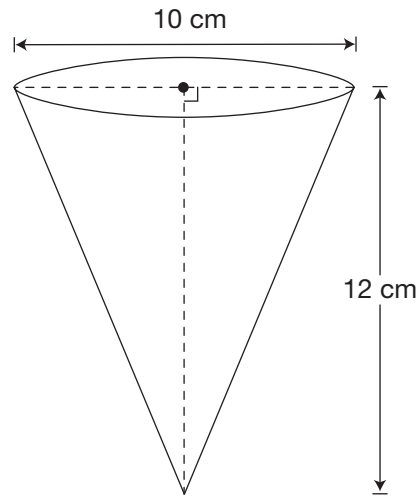
20 This diagram shows a greenhouse that is built in the shape of a half-cylinder.



Material to cover the roof costs $\$3/\text{m}^2$. The shaded ends will not be covered. Which is closest to the cost of covering the roof?

- a \$7540
- b \$12 570
- c \$15 080
- d \$37 700

21 A cone is pictured below.



Hint:

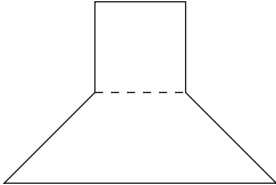
Use Pythagorean theorem as part of your process.

Which of the following is closest to the surface area of the cone?

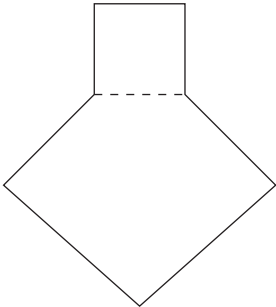
- a 267 cm^2
- b 283 cm^2
- c 691 cm^2
- d 723 cm^2

22 Which of the following composite shapes has 900° as the sum of its interior angles?

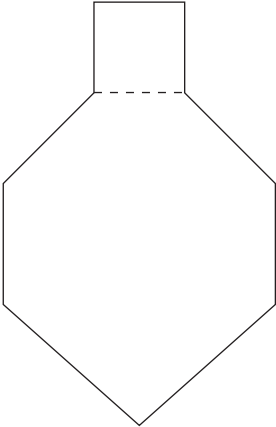
a



b



c



d

