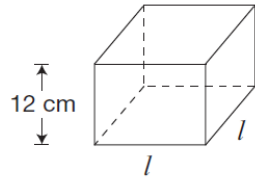


## Review and EQAO Practice for Chapter 9 - Optimization

# 2018

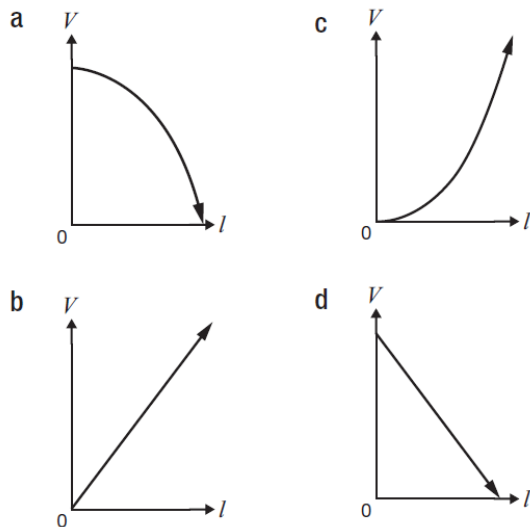
- 5** The side lengths,  $l$ , of this square-based prism can change. The height is 12 cm and **cannot** change.



The volume of the prism for one possible side length is given in this chart.

$l$	$V$
1	12
2	
3	

Which graph could represent the relationship between the volume,  $V$ , in  $\text{cm}^3$ , of this square-based prism and the length of a side of its square base,  $l$ , in cm?

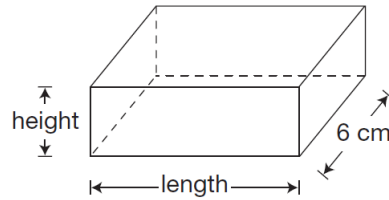


- 19** Which of the following dimensions produces a rectangle with the smallest perimeter?

- a  $10 \text{ m} \times 120 \text{ m}$
- b  $30 \text{ m} \times 40 \text{ m}$
- c  $50 \text{ m} \times 24 \text{ m}$
- d  $60 \text{ m} \times 20 \text{ m}$

# 2017

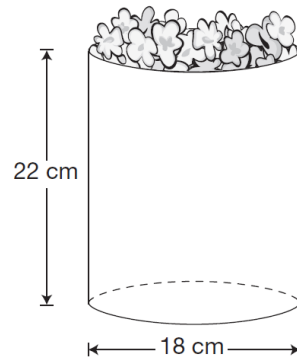
- 19** The rectangular prism pictured below has a volume of  $216 \text{ cm}^3$ .



Which of the following lengths produces the prism with the smallest height?

- a 3 cm
- b 6 cm
- c 12 cm
- d 18 cm

- 21** Paper is used to make a popcorn container in the shape of an open-topped cylinder, as pictured.



Which of the following calculations would correctly determine the least amount of paper required to make the container?

- a  $\pi(9)^2(22)$
- b  $\pi(18)^2(22)$
- c  $\pi(9)^2 + 2\pi(9)(22)$
- d  $\pi(18)^2 + 2\pi(18)(22)$

# 2015

- 26** The table below lists the widths of four rectangles, each with an area of  $72 \text{ cm}^2$ .

	Width (cm)
Rectangle 1	6
Rectangle 2	8
Rectangle 3	10
Rectangle 4	18

Which rectangle has the smallest perimeter?

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

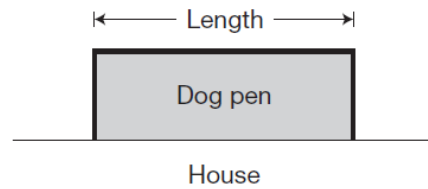
- 27** Salt is sold in packages in the shape of a rectangular-based prism that is not a cube. A new package in the shape of a cube is designed to contain the same volume.

Which of the following is true about the new package?

- a It holds less salt.
- b It holds more salt.
- c It requires less material.
- d It requires more material.

# 2013

- 24** Marcus is building a rectangular dog pen along the side of his house as shown below.



Marcus has 20 m of fencing for the 3 sides of the dog pen.

What is the length of the dog pen with the maximum area?

- a 4 m
- b 5 m
- c 10 m
- d 12 m