

Released Assessment Questions, 2015

QUESTIONS

Grade 9 Assessment of Mathematics • Applied

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*.

Education Quality and
Accountability Office





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

1 Which of the following ratios is equivalent to 2:5?

- a 5:2
- b 2:7
- c 14:35
- d 22:25

2 The ratio of boys to girls in Mandy's mathematics class is 3 to 12.

This ratio is the same in Mandy's science class, in which there are 20 girls. How many boys are there in Mandy's science class?

- a 5
- b 8
- c 11
- d 15

3 Jake and Minh buy food for a fundraiser.

- One case of 24 hamburgers costs \$37.
- One case of 12 drinks costs \$9.

How much will the food for 72 meals cost if each meal is made up of 1 hamburger and 1 drink?

- a \$276
- b \$165
- c \$138
- d \$92

4 A school orders 120 calculators.

The school receives a shipment containing 80% of the order, and 1 out of every 3 of these calculators is black.

How many black calculators has the school received in this shipment?

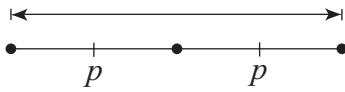
- a 32
- b 40
- c 50
- d 96

5 What is the value of $-5 - (-3)$?

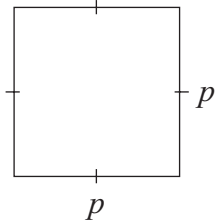
- a -8
- b -2
- c 2
- d 8

6 A line, square and cube are pictured below.

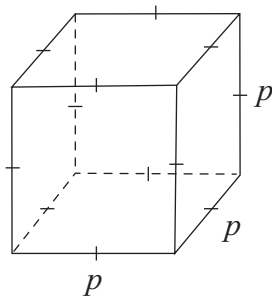
Line



Square



Cube



Which of the following statements describes one of the above?

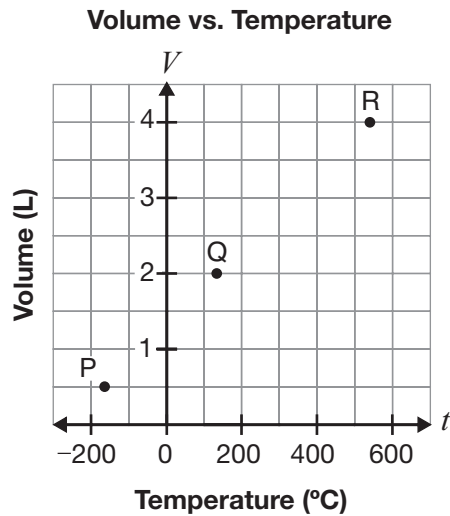
- a The length of the line is p^2 .
- b The area of the square is p^2 .
- c The volume of the cube is $3p$.
- d The perimeter of the square is $2p$.

7 Which of the following is a simplified form of the expression below?

$$7(3x + 5)$$

- a $56x$
- b $10x + 12$
- c $21x + 5$
- d $21x + 35$

- 8** Information about the volume of a particular gas and its temperature is shown on the graph.



Which of the following is true about the information represented in this graph?

- a The volume of the gas is less at R than at P.
- b The volume of the gas is greater at Q than at R.
- c The temperature of the gas is lower at P than at Q.
- d The temperature of the gas is higher at Q than at R.

- 9** Each week, a salesperson is paid a base salary of \$250 plus \$100 for each car sold.

Which of the following shows information that is all correct about the salesperson's total pay for a week?

a

Number of cars sold	Total pay (\$)
1	250
4	650
5	750

b

Number of cars sold	Total pay (\$)
1	250
4	1000
5	1250

c

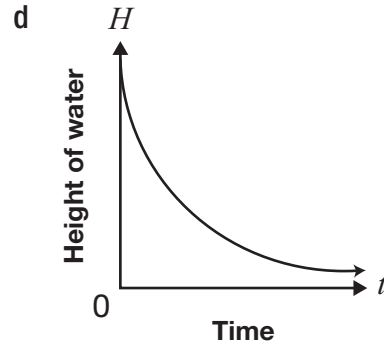
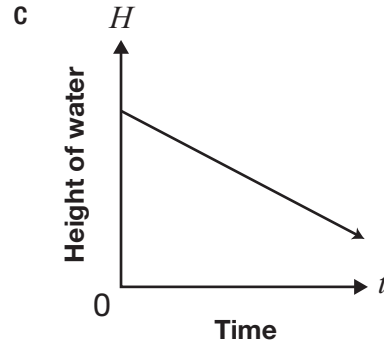
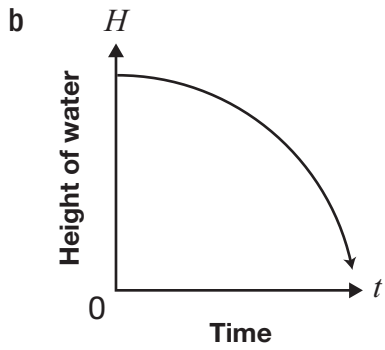
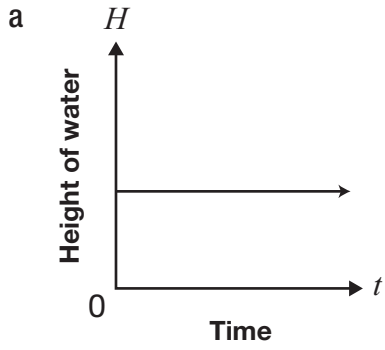
Number of cars sold	Total pay (\$)
1	350
4	1400
5	1750

d

Number of cars sold	Total pay (\$)
1	350
4	650
5	750

10 Rita measures the height of the water in a swimming pool as it is pumped out at a constant rate.

Which graph best represents the height of the water?



11 Use first differences to determine which table of values shows data from a linear relationship.

a

n	C
1	1
2	3
3	6
4	10

b

n	C
1	-1
2	-2
3	-1
4	-2

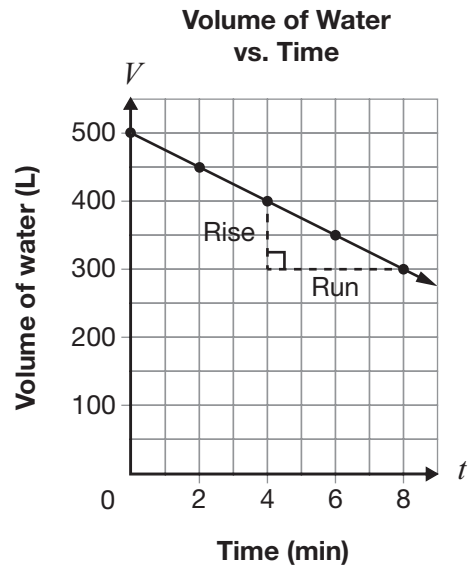
c

n	C
0	0
1	1
2	4
3	9

d

n	C
0	0
1	3
2	6
3	9

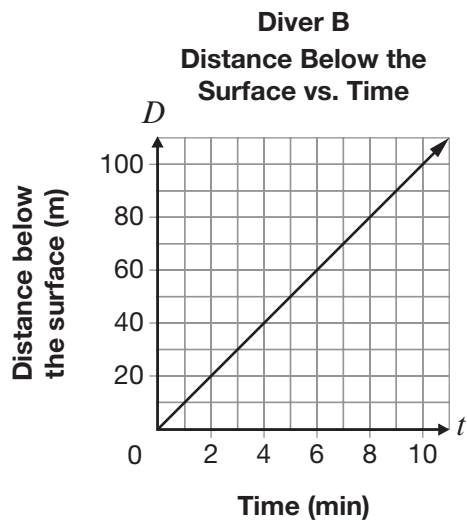
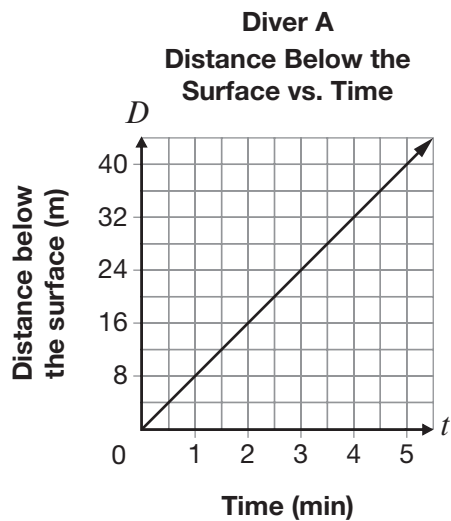
12 The graph below shows information about the linear relationship between the volume of water in a tank and time.



What is the rate of change in this relationship?

- a -0.04 L/min
- b -0.5 L/min
- c -25 L/min
- d -50 L/min

- 13** The relationship between the distance below the surface and time for two scuba divers is shown by the graphs below.



How much faster is diver B diving than diver A?

- a 0 m/min
- b 2 m/min
- c 10 m/min
- d 12 m/min

- 14** The equation $C = 45 + 3d$ represents the relationship between total cost, C , in dollars, and the number of days, d .

Which of the following is true about this relationship?

- a The total cost is \$48 per day.
- b The total cost is \$45 for 3 days.
- c The total cost is made up of a \$45 fixed fee and \$3 per day.
- d The total cost is made up of a \$3 fixed fee and \$45 per day.

- 15** The total cost of a cellphone plan, C , in dollars, is determined by the equation

$$C = 10 + 0.15n,$$

where n is the number of text messages sent.

If 25 text messages are sent, what is the total cost?

- a \$13.75
- b \$35.15
- c \$100.00
- d \$253.75

- 16** Amanda has a snow-shovelling business. Advertising costs her \$5 in total. She charges \$15 per driveway.

Which equation represents the relationship between her profit, P , and the number of driveways that she shovels, n ?

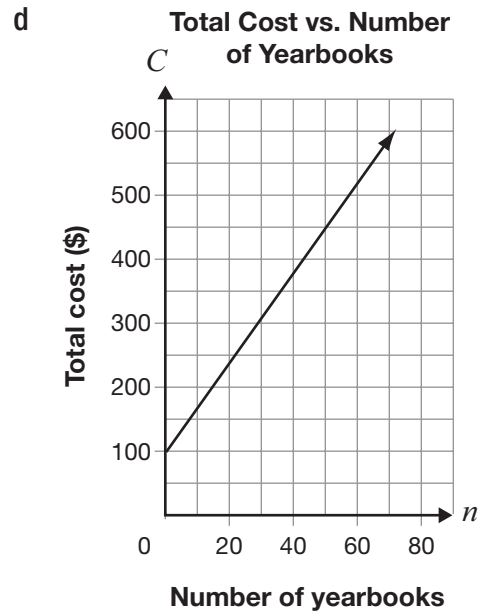
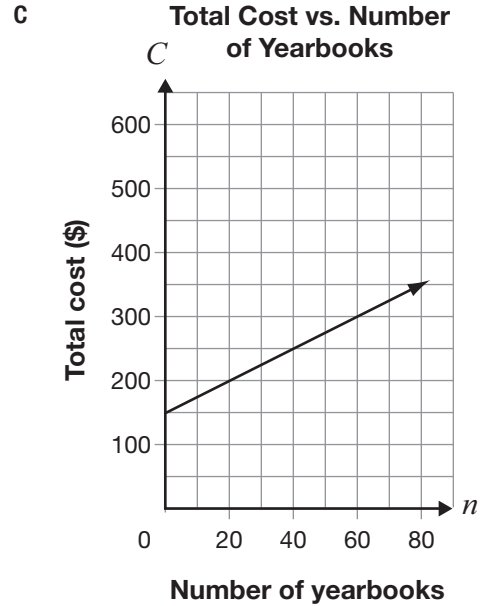
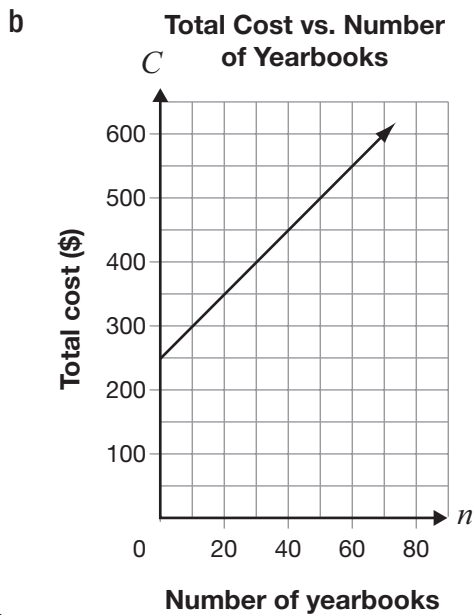
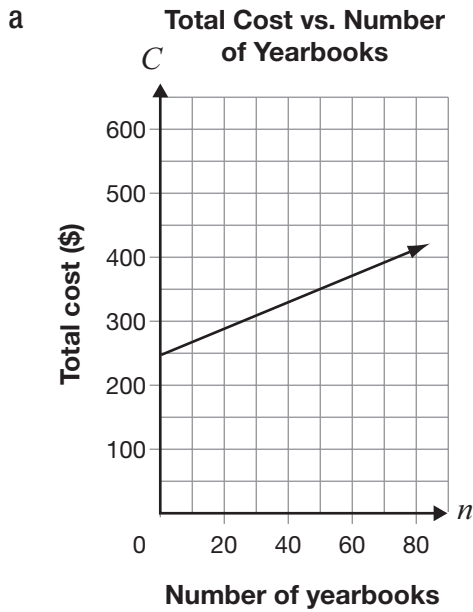
- a $P = 10n$
- b $P = 20n$
- c $P = 15n - 5$
- d $P = 5n - 15$

- 17** Last year's relationship between the total cost of producing yearbooks, C , and the number of yearbooks produced, n , is represented by the equation below.

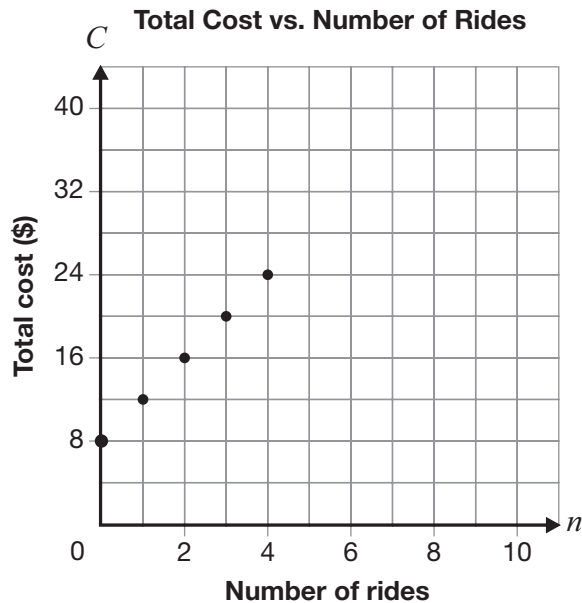
$$C = 150 + 5n$$

This year, the initial cost is increased but the cost per yearbook is decreased.

Which graph could represent this year's relationship between total cost and the number of yearbooks?



- 18** An amusement park has two options for rides.
- All-Day Pass: The total cost is \$36 for unlimited rides.
 - Pay-as-You-Go: Information about the linear relationship between the total cost and the number of rides is shown on the graph.



Which of the following is a correct comparison of these two options?

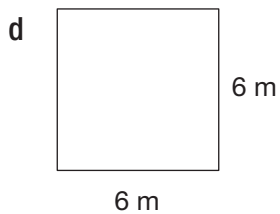
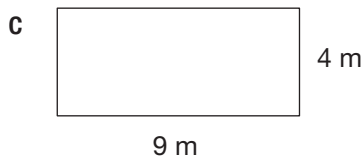
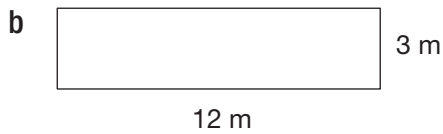
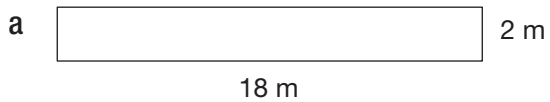
- a Pay-as-You-Go is cheaper for 8 rides.
- b The All-Day Pass is always more expensive.
- c The All-Day Pass is cheaper if the number of rides taken is less than 6.
- d Pay-as-You-Go is more expensive if the number of rides taken is more than 7.



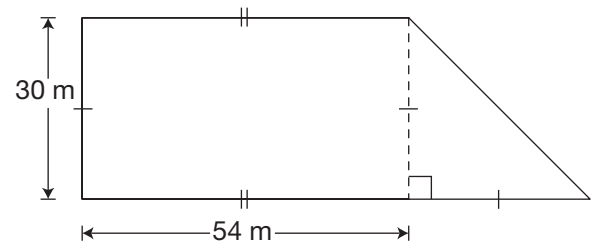
Go to the *Answer Booklet* and complete the seven open-response questions before continuing with question 26.

- 19** Open-Response
- 20** Open-Response
- 21** Open-Response
- 22** Open-Response
- 23** Open-Response
- 24** Open-Response
- 25** Open-Response

26 Which rectangle below has the smallest perimeter?



27 Jensen is seeding his lawn. The shape of his lawn is shown in the diagram below.



Each bag of grass seed covers 310 m^2 .

What is the minimum number of bags of seed that Jensen will need to seed his entire lawn?

- a** 5
- b** 6
- c** 7
- d** 8

28 Tennis balls have a radius of 3.5 cm.

Which of the following is closest to the volume of 2 tennis balls?

- a** 88 cm^3
- b** 180 cm^3
- c** 359 cm^3
- d** 1078 cm^3

29 The Snack Company sells popcorn in 2 different-sized boxes. Each box is in the shape of a rectangular prism.

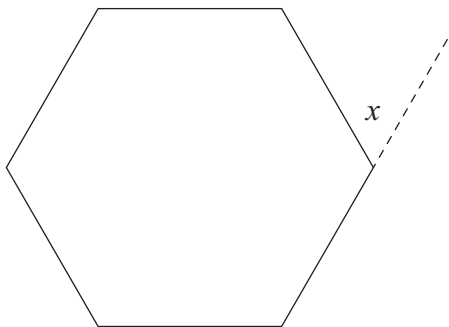
- Box A has dimensions 10 cm by 20 cm by 24 cm.
- Box B has dimensions 12 cm by 22 cm by 20 cm.

The price of the popcorn per cm^3 is the same for both boxes, and the price of each box is determined by the total volume of popcorn it can hold.

If Box A's price is \$6.24, what is the price of Box B?

- a \$5.67
- b \$6.24
- c \$6.86
- d \$9.62

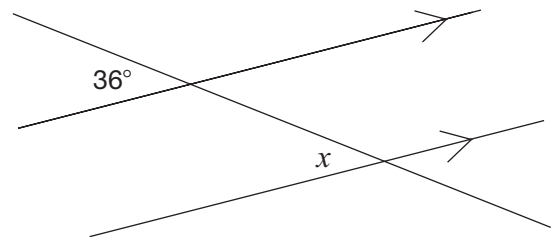
30 A regular hexagon with one side extended is shown.



What is the value of x ?

- a 30°
- b 60°
- c 120°
- d 240°

31 What is the value of x in the diagram below?



- a 36°
- b 54°
- c 126°
- d 144°