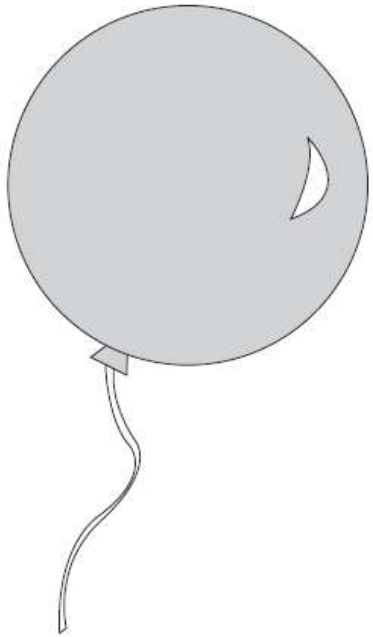
Grade 9 Applied

EQAO

Practice Session #4

1 Air is pumped to fill a spherical balloon. Each time air is pumped, 300 cm^3 of air enters the balloon.



Which of the following is closest to the number of times air must be pumped to fill an empty spherical balloon to a radius of 10 cm?

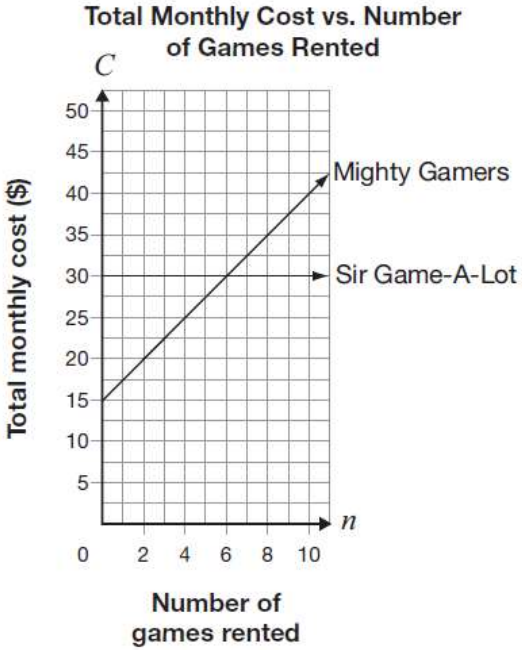
a 4

b 14

c 30

d 42

2 Data about the total monthly cost to rent video games from two online game sites are shown on the graph below.



Which of the following statements is true?

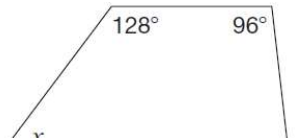
a It costs more to rent from Sir Game-A-Lot after 6 games.

b It costs less to rent from Mighty Gamers after 30 games.

c It costs the same amount to rent 6 games from the two sites.

d It costs the same amount to rent 30 games from the two sites.

What is the value of x in the diagram below?

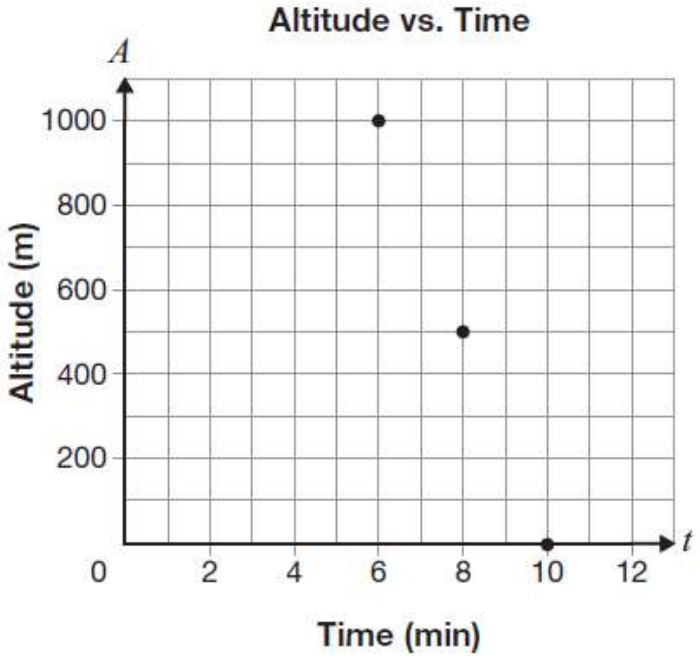


a 60°

b 68°

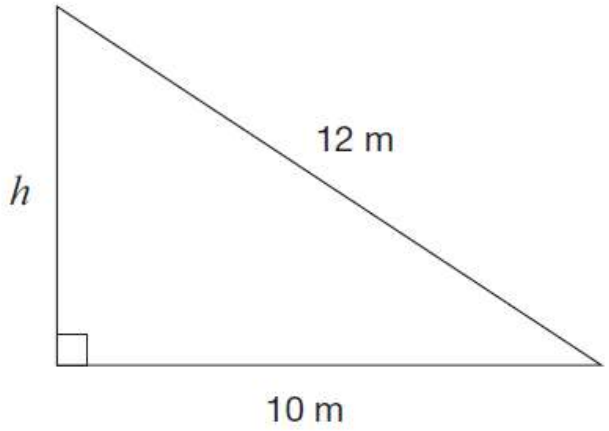
c 112°

3 Each of the three points on the grid below gives information about the altitude of a hot air balloon at a certain time.



If the relationship between altitude and time is linear, what was the altitude of the balloon at 4 minutes?

4 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

5 The cost, C, in dollars, of a pizza with n toppings is represented by the equation $C = 2n + 5$.

Which of the following statements is true?

a The base cost of the pizza is \$2, and the cost per topping is \$5.

b The base cost of the pizza is \$5, and the cost per topping is \$2.

c The base cost of the pizza is \$7, and the cost per topping is \$2.

d The base cost of the pizza is \$7, and the cost per topping is \$5.

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6 A small case of pop, with 12 cans, costs \$3.96. A large case has 18 cans. The cost per can in the large case is \$0.02 less than in the small case.

What is the cost of a large case?

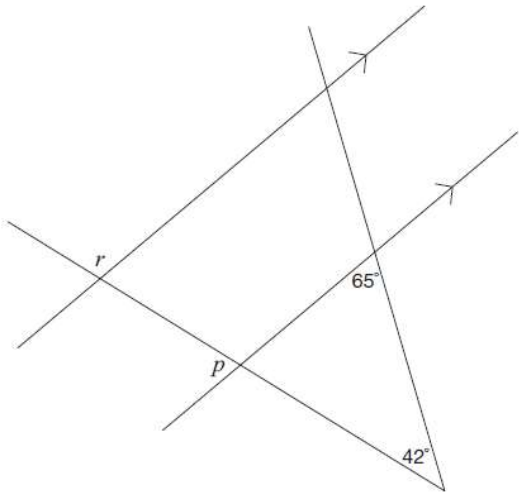
a \$3.60

b \$3.72

c \$5.58

d \$5.94

7 Consider the diagram below.

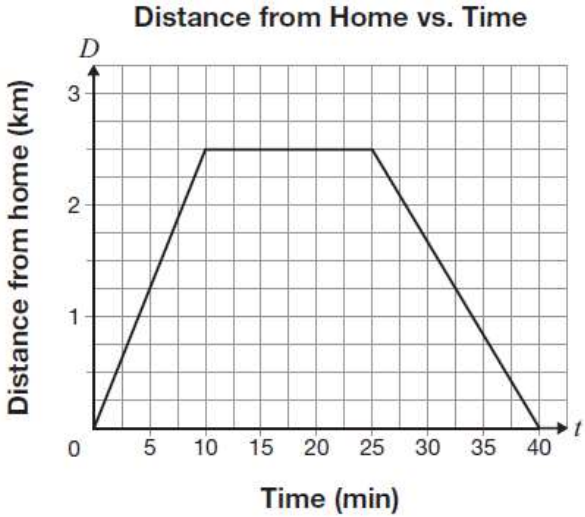


Complete the chart below with the values for p and r. Justify your answers using geometric properties.

Value	Justification using geometric properties
$p =$ _____	
$r =$ _____	

8 Oscar rides his bicycle to the beach along a straight road. While at the beach, he realizes he has forgotten his sunscreen and returns home.

The graph below shows information about his trip.



Which of the following is true about Oscar's trip?

a The beach is 10 km from Oscar's home.

b His speed riding to the beach is 0.25 km/min.

c His speed riding home from the beach is 1.7 km/min.

d He stays at the beach for 25 minutes before he returns home to get sunscreen.

9 What value of x makes the equation $4x - 5 = -6x + 15$ true?

a 2

b 1

c -5

d -10

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10 In the first year of a fundraising campaign, donations are collected at a rate of $700 each day for 8 days.

In the second year, the daily rate doubles and the campaign is 3 days longer.

How much money is raised in the second year?

a $4200

b $7700

c $11 200

d $15 400

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

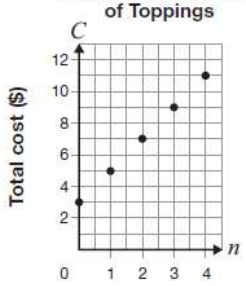
A restaurant charges \$3 for a cheese pizza plus \$2 per additional topping.

Which of the following shows two models that represent the relationship between the total cost of a pizza, C, and the number of additional toppings on it, n?

a

Number of toppings, n	Total cost, C (\$)
0	3
2	7
4	11
6	15

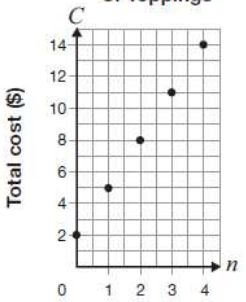
Total Cost vs. Number of Toppings



b

$C = 3n + 2$

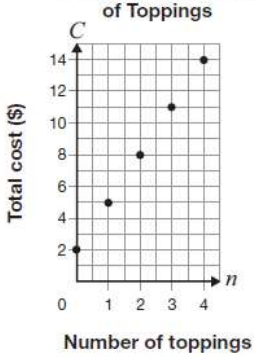
Total Cost vs. Number of Toppings



c

Number of toppings, n	Total cost, C (\$)
0	2
2	8
4	14
6	20

Total Cost vs. Number of Toppings



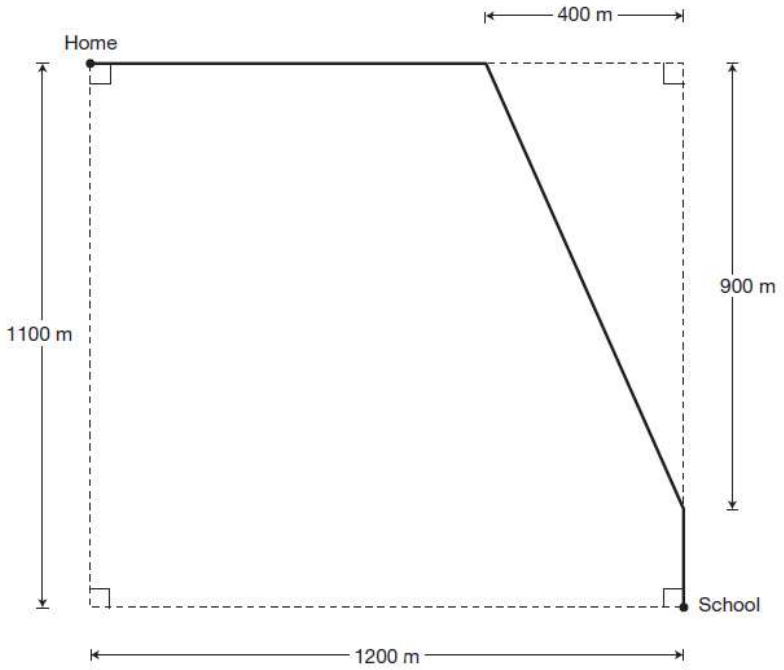
d

$C = 2n + 3$

Number of toppings, n	Total cost, C (\$)
0	2
1	5
2	8
3	11

13

Chandra uses the map below to determine the distance from home to school.



Determine the total distance she will travel from home to school if she walks along the dark, solid lines shown on the map.

Rental Rates

14

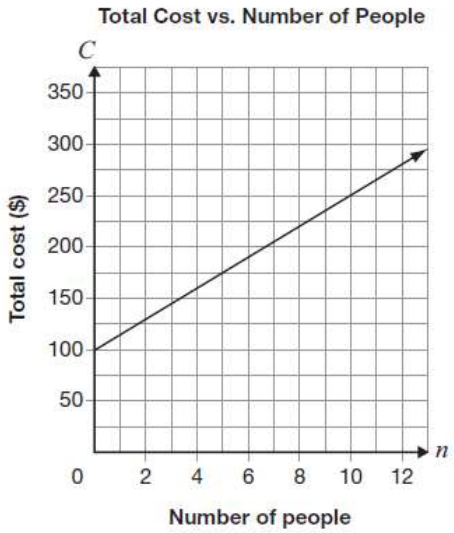
The total cost of a banquet includes a fixed fee to rent the hall and a cost per person.

Information about the total cost at two different halls is shown below.

Hall A

Number of people, n	Total cost, C ($)
10	275
20	450
30	625

Hall B



Which hall's total cost includes a lower cost per person?

15

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

16 In an election for student council president, 480 students vote.

Jade receives 55% of the votes. Ericka receives the rest of the votes.

How many votes does Ericka receive?

a 216

b 264

c 425

d 435

17 A store gives reward points for every dollar spent. The number of reward points varies directly with the total amount spent.

Sofia spends $300 and receives 15 reward points.

Juan spends $900. He receives reward points at the same rate as Sofia.

How many **more** reward points will Juan receive than Sofia?

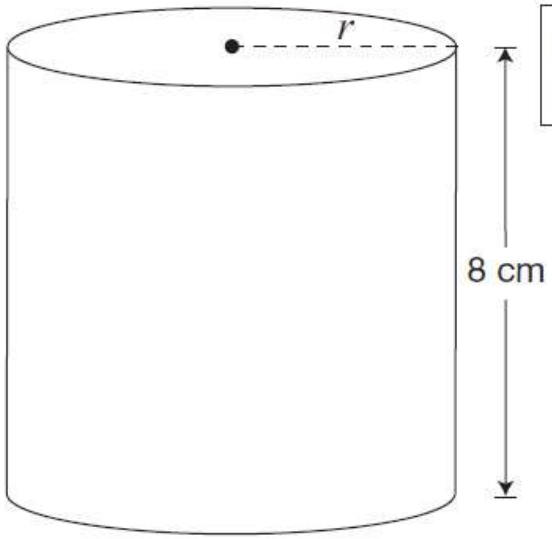
a 20

b 30

c 60

d 90

18 The volume of the cylinder shown below is $408\ cm^3$.



Hint:
$V = \pi r^2 h$

Which of the following is closest to the radius of the cylinder?

a 4 cm

b 8 cm

c 14 cm

d 16 cm

19 Each week, Marissa withdraws the same amount from her bank account.

The equation $A = 1550 - 90w$ represents the relationship between the amount of money remaining in her account, A, in dollars, and the number of weeks of withdrawing, w.

For how many weeks has Marissa made withdrawals when the amount remaining in the account is \$110?

a 14

b 16

c 17

d 18

20 Water is being pumped to empty a swimming pool.

At 6 a.m., the water level is 150 cm. Every 2 hours, the water level drops by 30 cm.

What is the earliest time when the pool will be empty?

a 10 a.m.

b 11 a.m.

c 4 p.m.

d 5 p.m.

ANSWERS

1) b
2) c
3) 1500 m
4) b
5) b
6) c
7) $p = 73°$, $r = 107°$
8) b
9) a
10) d
11) c
12) a
13) 1984.9 m
14) Hall A: $17.50 per person
    Hall B: $15.00 per person
    Hall B has a lower cost per person
15) d
16) a
17) b
18) a
19) b
20) c