Academic

Grade 9 Assessment of Mathematics

Winter 2009

SAMPLE ASSESSMENT QUESTIONS

Record your answers to the multiple-choice questions on the blank Student Answer Sheet (Winter 2009, Academic).

Education Quality and Accountability Office

EQAO

Please note: The format of this booklet is different from that used for the assessment. The items themselves remain the same.

1 What is the value of $(x^2)^3$ when $x = \frac{1}{2}$?

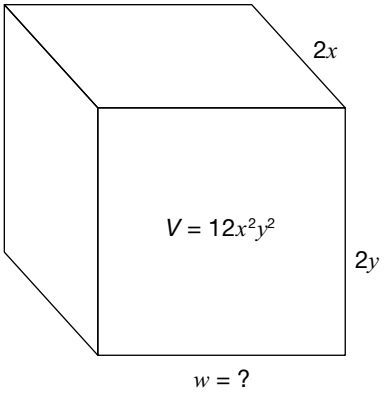
a $\frac{1}{4}$

b $\frac{1}{12}$

c $\frac{1}{32}$

d $\frac{1}{64}$

2 A box with a volume of $12x^2y^2$ is shown below.



Hint: $V = lwh$

What is the width of the box?

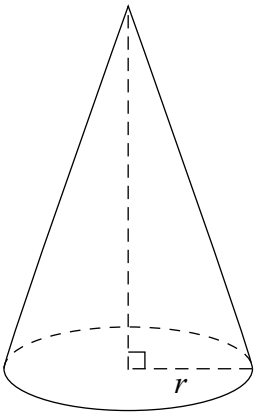
a $2xy$

b $3xy$

c $4x^3y^3$

d $8x^3y^3$

3 The cone shown below is 20 cm high and has a total volume of 1000 cm^3.



Which of the following is closest to the length of the radius, r?

a 6.9 cm

b 6.2 cm

c 4.0 cm

d 2.3 cm

4 Alfredo and his wife, Jody, work in a restaurant.

Last week Alfredo received an average of \$15 in tips for each of the 55 tables he served. Jody received an average of \$20 in tips for each of the 60 tables she served.

They are planning a weekend trip. Alfredo will pay a total of \$220 for their hotel room and Jody will pay a total of \$160 for their rental car.

How much of their combined tips will be left over after they have paid for their hotel room and rental car?

a \$1620

b \$1645

c \$2025

d \$2405

5 CD Sell-Off

Juan belongs to a CD club that sells CDs for $11.44 each before tax. His first shipment of CDs costs $90.49 including 13% tax.

How many CDs are in his first shipment?

Show your work.

6 Which table of values represents a linear relation?

a

x	y
1	$\frac{1}{3}$
2	$\frac{2}{3}$
3	1
4	$\frac{4}{3}$

b

x	y
0	5
5	7
10	10
15	14

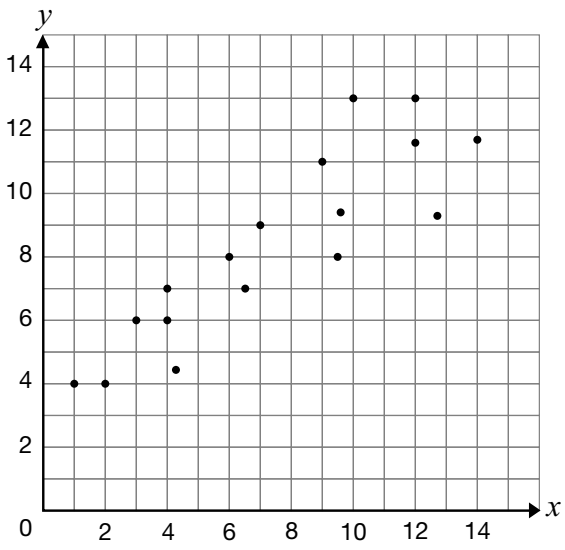
c

x	y
1	2
2	4
3	8
4	16

d

x	y
0	$\frac{1}{2}$
5	$\frac{1}{4}$
10	$\frac{1}{6}$
15	$\frac{1}{8}$

7 Which of the following could be the slope of a line of best fit for the data shown in the scatter plot below?



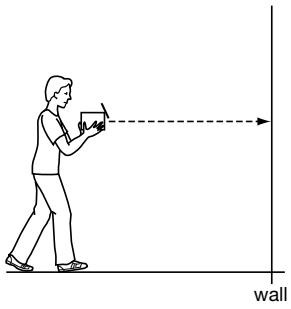
a -2

b -1

c 1

d 2

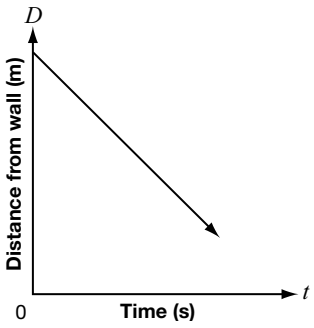
8 In an investigation, a student holds a motion detector, points it at a wall and walks toward the wall.



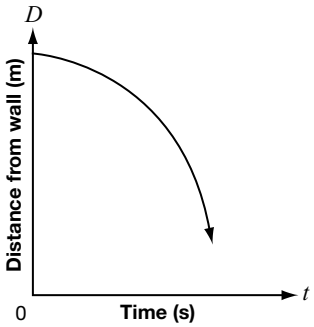
The student walks slowly at first and then speeds up as he approaches the wall.

Which of the following graphs would be produced on the graphing calculator?

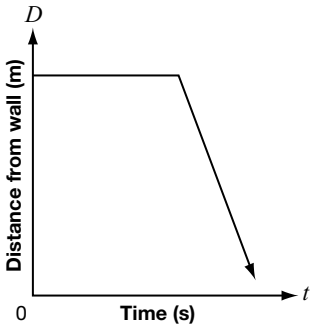
a



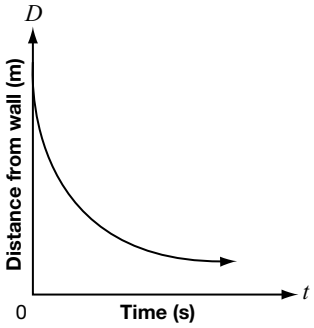
b



c



d



9 The table of values below displays the cost of renting a bicycle.

Time, t **(h)**	**Cost,** C **($)**
0	25
1	30
2	35
3	40

Which equation models the cost of renting a bicycle?

a $C = 5t$

b $C = 25t$

c $C = 5t + 25$

d $C = 25t + 5$

10 Picture Perfect

The cost of producing a family photo album is $0.50 per photo, plus a fixed cost for the album.

Circle the table below that represents this scenario.

Option 1

Number of photos, p	Cost, C
5	$2.50
10	$5.00
15	$7.50
20	$10.00

Option 2

Number of photos, p	Cost, C
5	$35.50
10	$36.00
15	$36.50
20	$37.00

Option 3

Number of photos, p	Cost, C
5	$37.50
10	$40.00
15	$42.50
20	$45.00

Justify your choice and include an explanation of why you did not choose the other options.

11 Which of the following statements is true for the line $5x - 2y - 12 = 0$?

a The slope is $\frac{2}{5}$ and the y-intercept is 12.

b The slope is -5 and the y-intercept is 6.

c The slope is 5 and the y-intercept is -12.

d The slope is $\frac{5}{2}$ and the y-intercept is -6.

12 For the slope of a line, the change in x is greater than the change in y. Which of the following could represent the slope of this line?

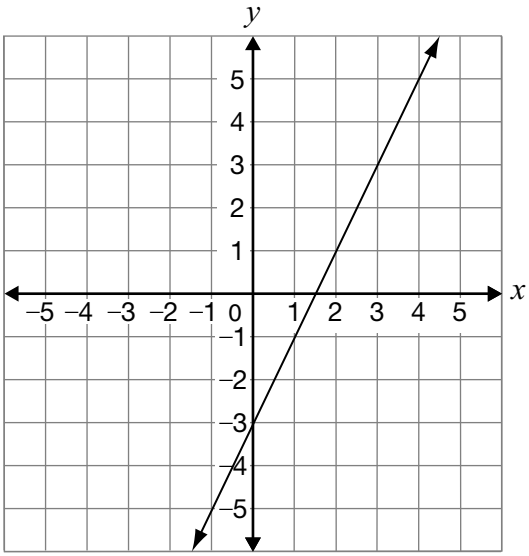
a $\frac{4}{3}$

b 2

c 1

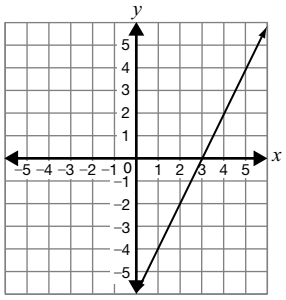
d $\frac{2}{5}$

13 The graph of a line is shown below.

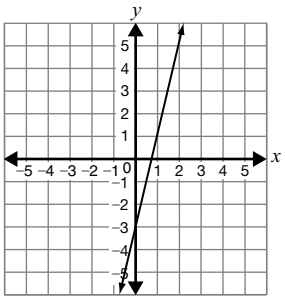


If the slope is doubled and the y-intercept remains constant, which graph below best represents the new line?

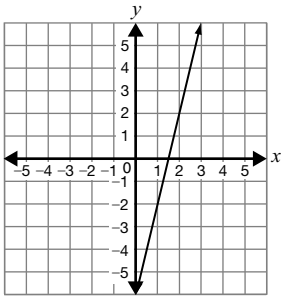
a



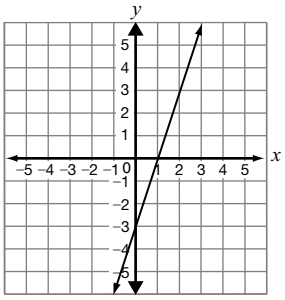
b



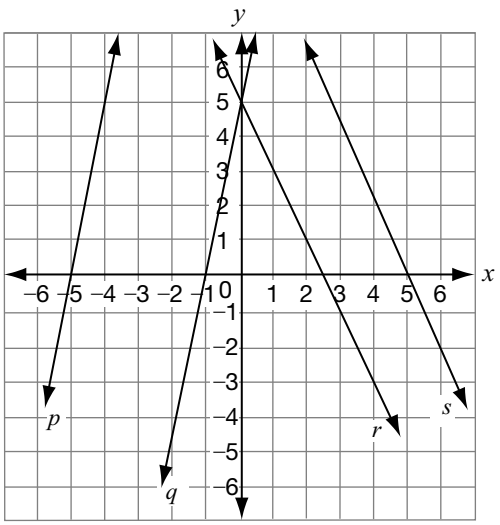
c



d



14 Consider the following linear relations.



Which line represents the graph of the equation $y = -2x + 5$?

a Line p

b Line q

c Line r

d Line s

15 The following table shows values for a linear relation.

x	y
−15	−33
−9	−25
3	−9
12	3

Which of the following equations represents the relationship shown in the table of values?

a $y = \frac{4}{3}x - 16$

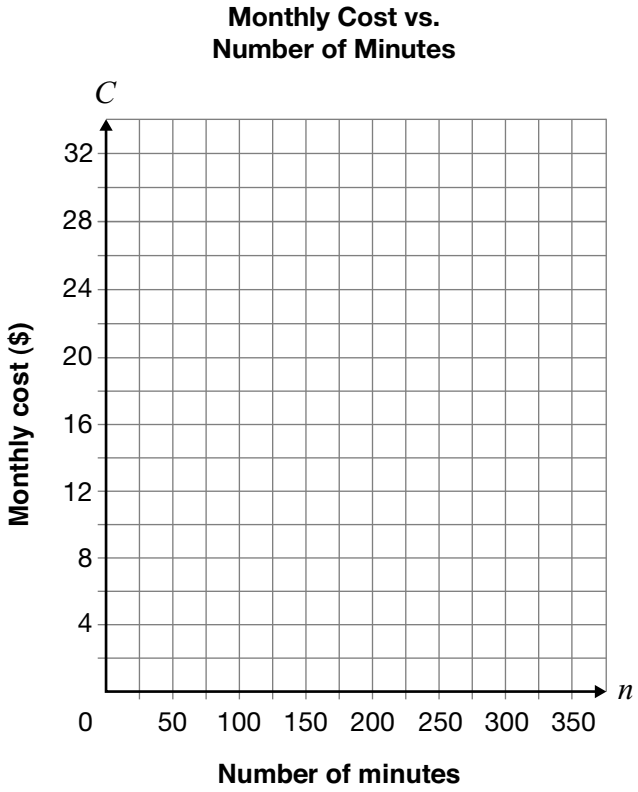
b $y = \frac{4}{3}x - 13$

c $y = \frac{3}{4}x - 9$

d $y = \frac{3}{4}x - 6$

16 Cellphone Plans

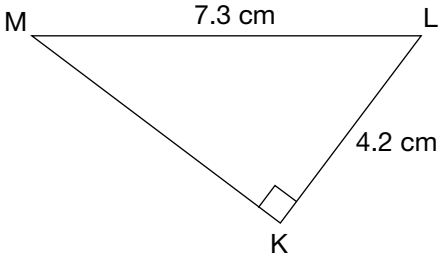
Serge is choosing a cellphone plan and wants the lowest cost. Cell-a-Bration charges $12 per month plus $0.05 per minute for cellphone service. E-Phone charges $28 per month for unlimited minutes.



Determine under which conditions Serge should choose Cell-a-Bration and under which conditions Serge should choose E-Phone.

Justify your answer.

17 Triangle KLM is shown below.



Which of the following is closest to the perimeter of triangle KLM?

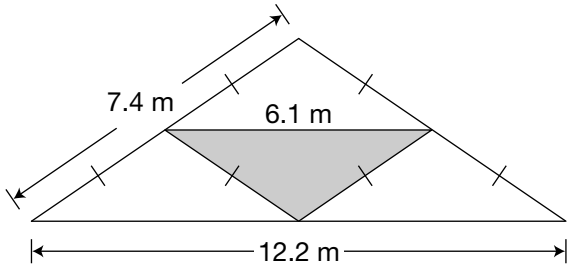
a 12.6 cm

b 16.3 cm

c 17.5 cm

d 21.0 cm

18 The frame of the roof of a small house is being constructed. A portion of the frame consists of four isosceles triangles as shown below.



What is the total length of the three sides that form the shaded interior triangle?

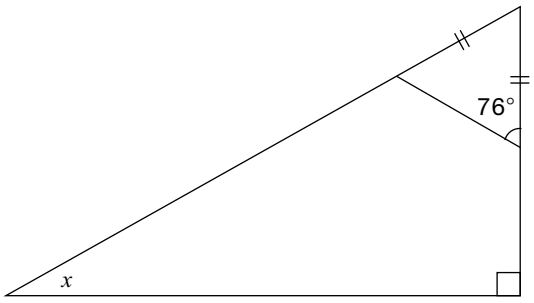
a 3.7 m

b 6.1 m

c 13.5 m

d 18.3 m

19 Consider the following diagram.



What is the value of x?

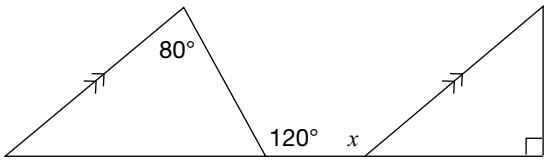
a 14°

b 28°

c 62°

d 76°

20 Consider the diagram below.



What is the value of x?

a 80°

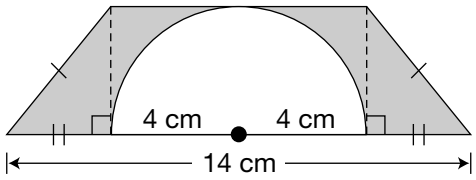
b 120°

c 140°

d 170°

21 Something's Missing

The semicircle in the diagram below has a radius of 4 cm.



What is the area of the shaded region?

Show your work.

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