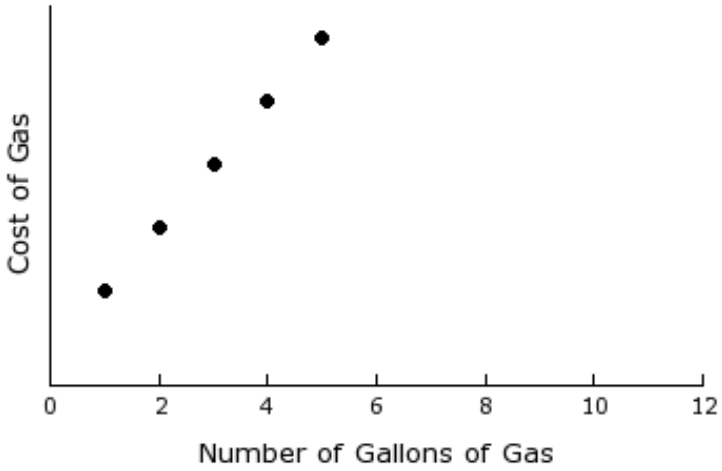
Coordinate Algebra EOC (GSE) Quiz

Creating Equations - (MGSE9-12.A.CED.2) Graph Equations

Student Name: _____ Date: _____

Teacher Name: THUYNGA DAO Score: _____

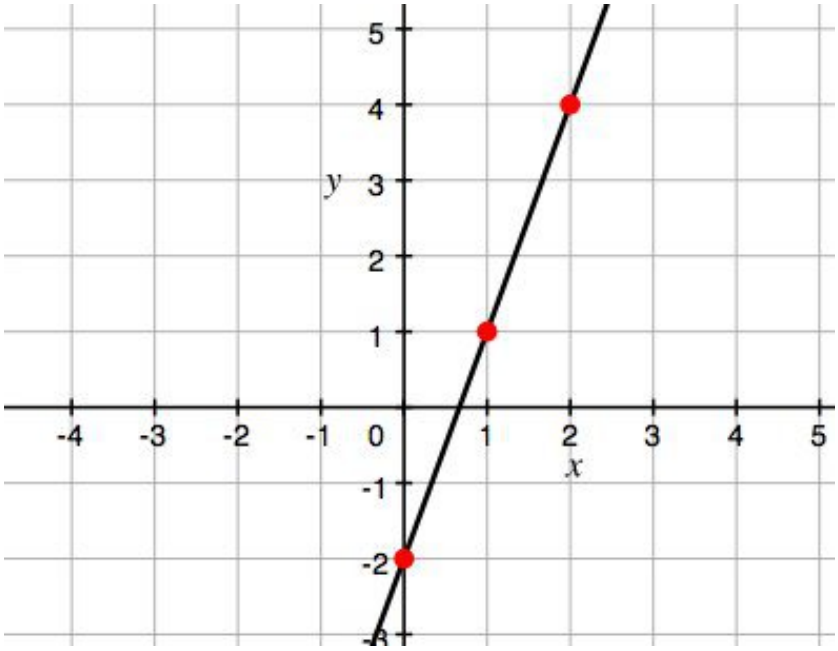
1)



The graph displays the total cost when buying gas by the gallon. Which statement best describes the relationship between cost and amount of gas purchased?

A) The more gas you buy, the more it costs.
B) The less gas you buy, the more it costs.
C) The more gas you buy, the less it costs.
D) The less gas you buy, the less it costs.

2)



What is the equation of the line graphed?

A) y = 3x
B) y = 3x - 2
C) y = -3x - 2
D) y = -3x + 2

3)

Sam is 4 times as old as Allie.

Write an equation to model this situation.

A) S = 4A
B) A = 4S
C) S = 4 + A
D) A = 4 + S

4)

x	y
2	2
3	4
4	6
5	8

Which function corresponds with the table?

A) f(x) = x + 2
B) f(x) = 2x - 2
C) f(x) = -2x + 2
D) f(x) = -2x - 1

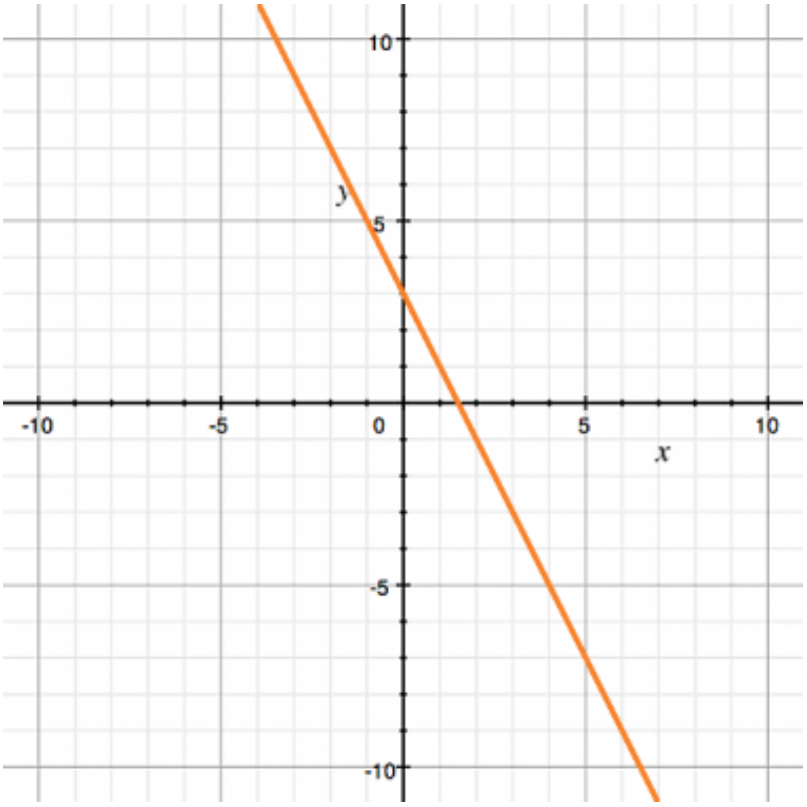
5)

x	y
0	-3
2	5
3	9
4	13

Which equation matches the table?

A) y = x - 3
B) y = x + 3
C) y = 4x - 3
D) y = 4x + 3

6)



Identify the equation of the graph shown.

A) y = 2x + 3
B) y = 2x - 3
C) y = -2x + 3
D) y = -2x - 3

7) Allie noticed that to get her test grade, she could take Valerie's grade, multiply it by 2 and subtract 15. If Valerie's test grade was *x*, how would you write Allie's test grade?

A) 2x
B) 2x + 15
C) 2x - 15
D) 15x - 2

8)

x	y
0	3
1	1
2	-1

Which equation represents the data in the table shown?

A) y = -2x
B) y = 2x + 3
C) y = -2x + 3
D) y = -2x - 3

9) A high school chorus has $1000 in its school account at the beginning of the year. They are putting on a fall concert to raise money for a trip later in the year. At the concert last year they sold tickets for $10 each. If they sell tickets at the same price the total amount in the chorus account can be represented by the linear function T = 10x + 1000. If they increase the ticket price to $15, how many tickets will they have to sell to have a total of $4000 in the account?

A) 100 tickets
B) 150 tickets
C) 200 tickets
D) 250 tickets

10)

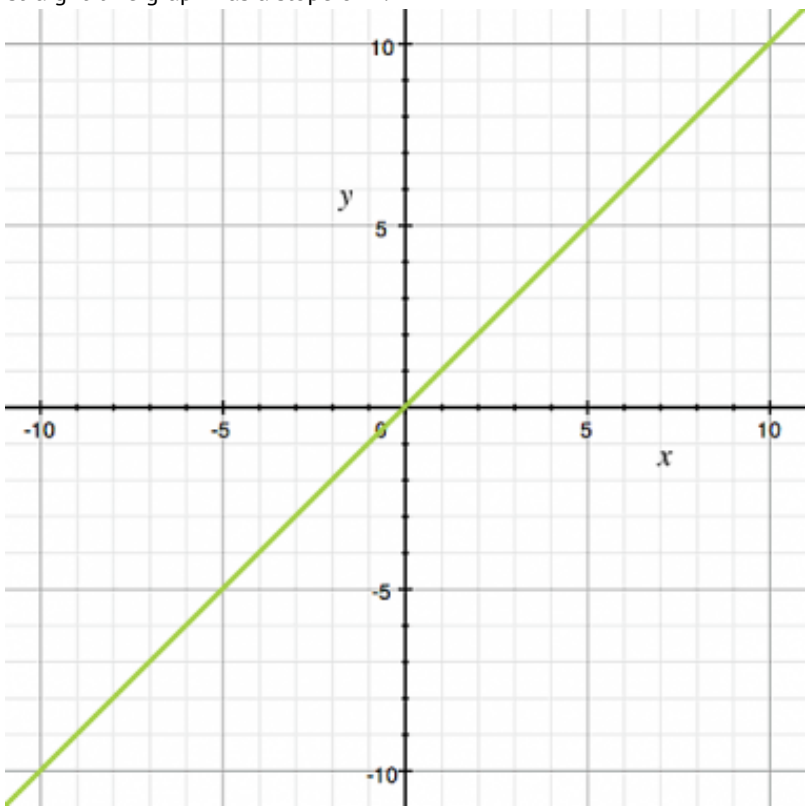
x	y
0	-7
1	-4
2	-1
3	2
4	5

Which equation corresponds to the function described in the table?

A) y = x - 7
B) y = x - 3
C) y = x - 1
D) y = 3x - 7

11) Which straight-line graph has a slope of 1?

A)



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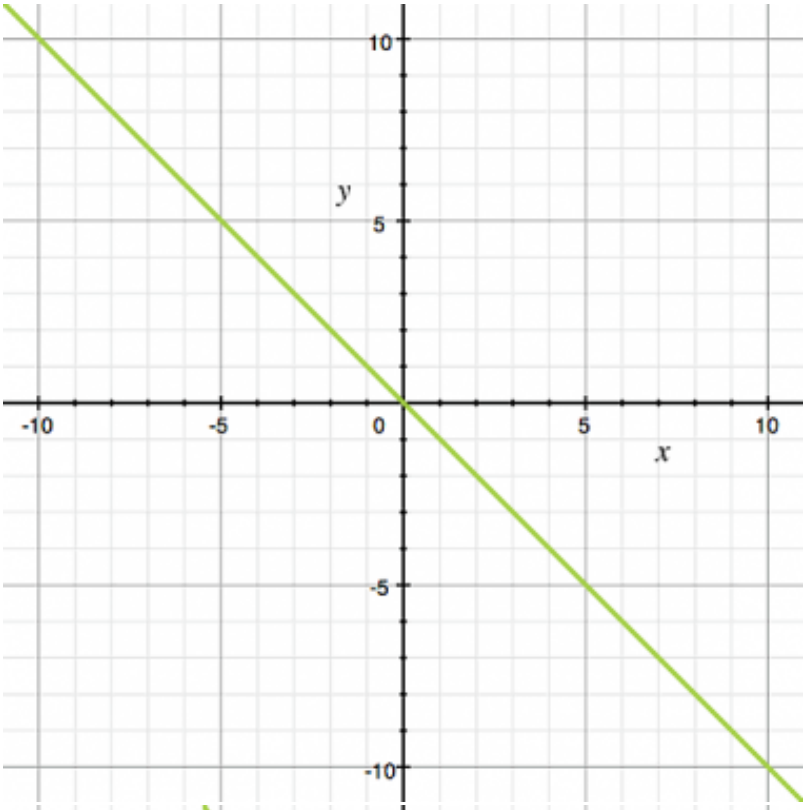
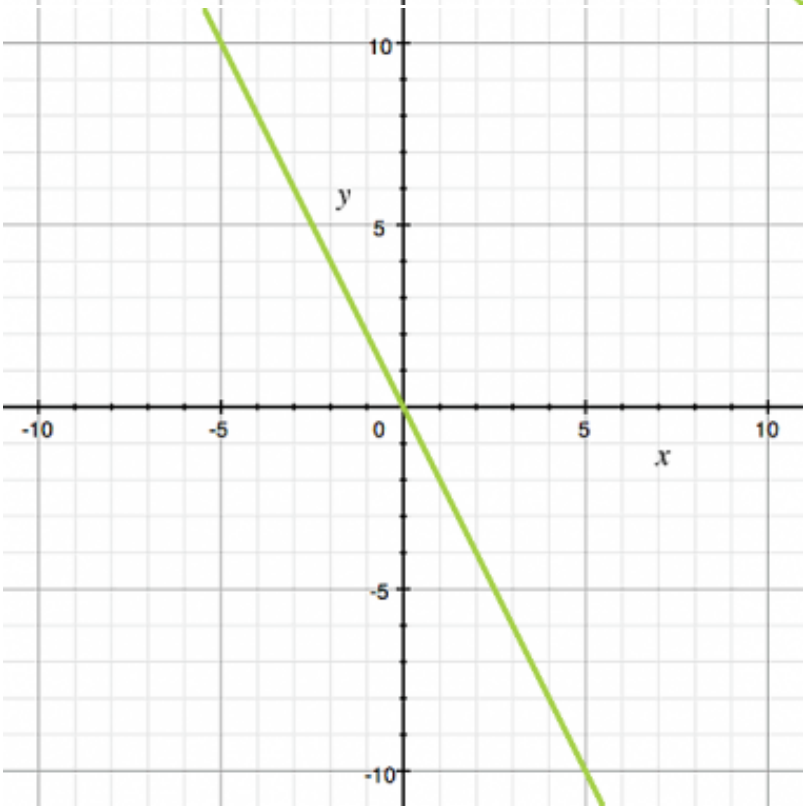
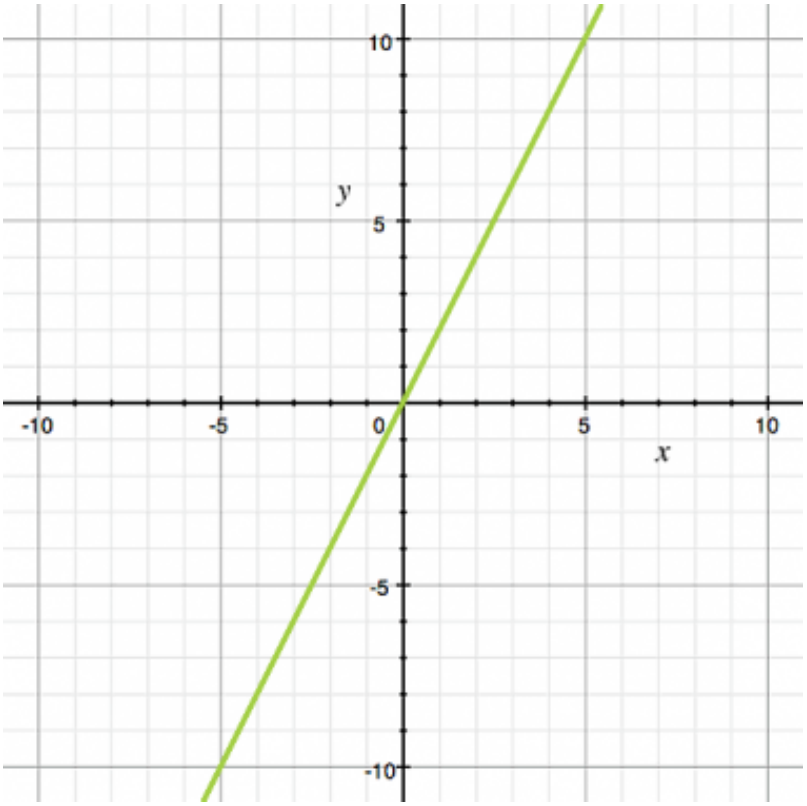


C)



D)



12)

In	Out
5	2
6	4
7	6
8	8
9	10
10	12
11	14

The table shows x-values going in and y-values coming out. The function being used is

A) f(x) = 2x
B) f(x) = x - 3
C) f(x) = x - 8
D) f(x) = 2x - 8

13)

x	y
0	3
1	1
2	-1

Which function corresponds to the table?

A) y = 3x - 2
B) y = 2x + 3
C) y = -2x + 3
D) y = -3x + 2

14) Martha is covering kitchen shelves with shelving paper. She has 6 shelves that are each $1\frac{3}{4}$ feet long. She buys $13\frac{1}{4}$ feet of shelving paper of the correct width. Which equation can be used to determine how much paper she will have left over?

A) $6(13\frac{1}{4}) = S$

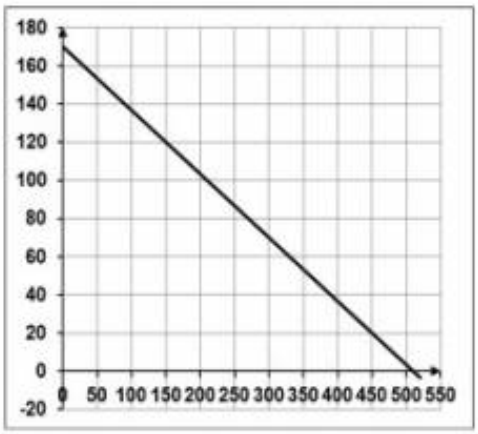
B) $13\frac{1}{4} + 1\frac{3}{4} - 6 = S$

C) $13\frac{1}{4} - 6(1\frac{3}{4}) = S$

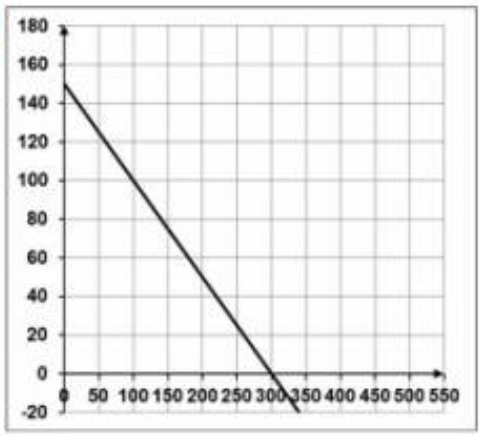
D) $13\frac{1}{4}(6) + 1\frac{3}{4} = S$

15)

A)



B)



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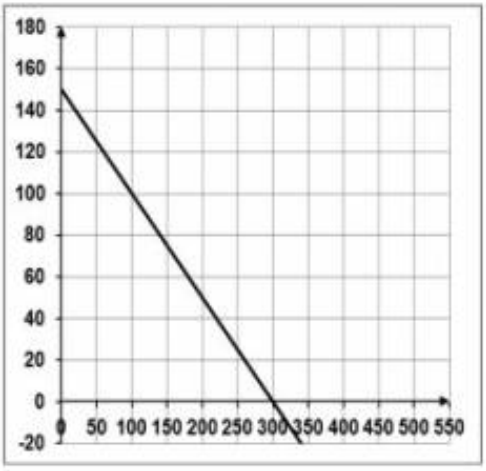
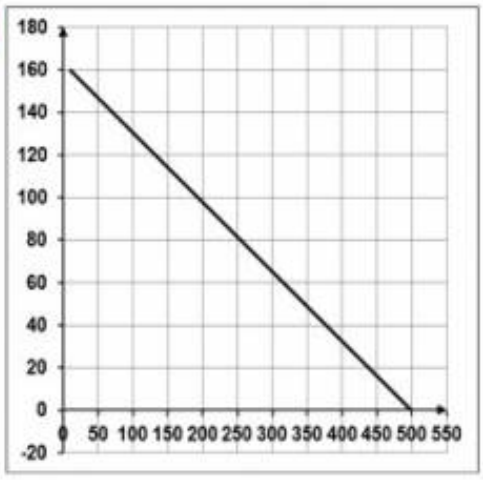


D)



The straight line profile of a ski hill is plotted on the coordinate plane. The coordinates (500, 0) and (0, 160) lie on the line.

SEPARATE GRAPHS Which graph represents the profile of the ski hill?

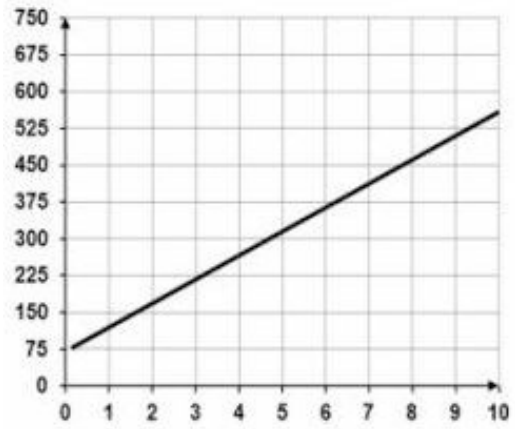
A)
B)
C)
D)

16)

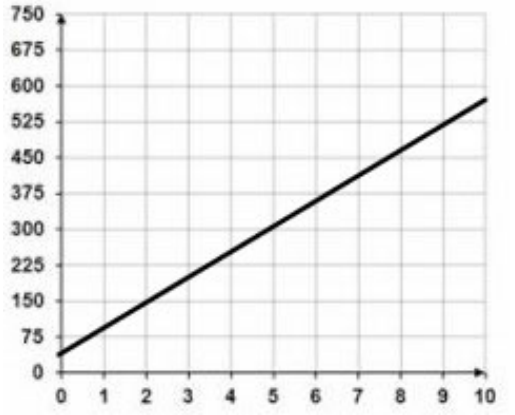
The path of an airplane taking off is modeled by a linear equation. The slope of the line is 50, and (2, 150) is a point on the line.

Which graph represents the path of the airplane?

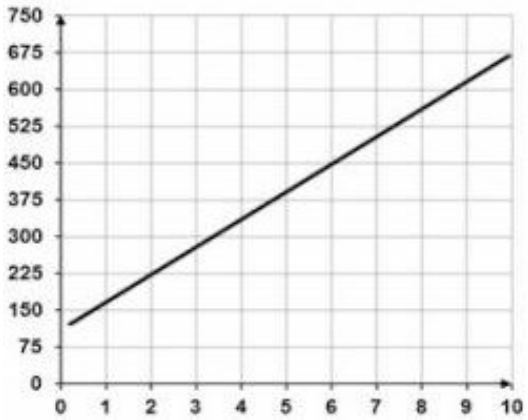
A)


750
675
600
525
450
375
300
225
150
75
0
0 1 2 3 4 5 6 7 8 9 10

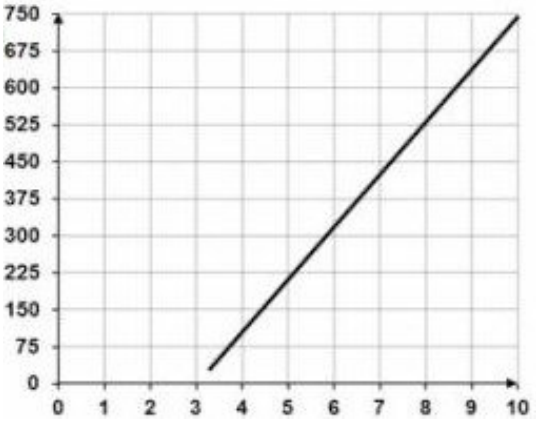
B)


750
675
600
525
450
375
300
225
150
75
0
0 1 2 3 4 5 6 7 8 9 10

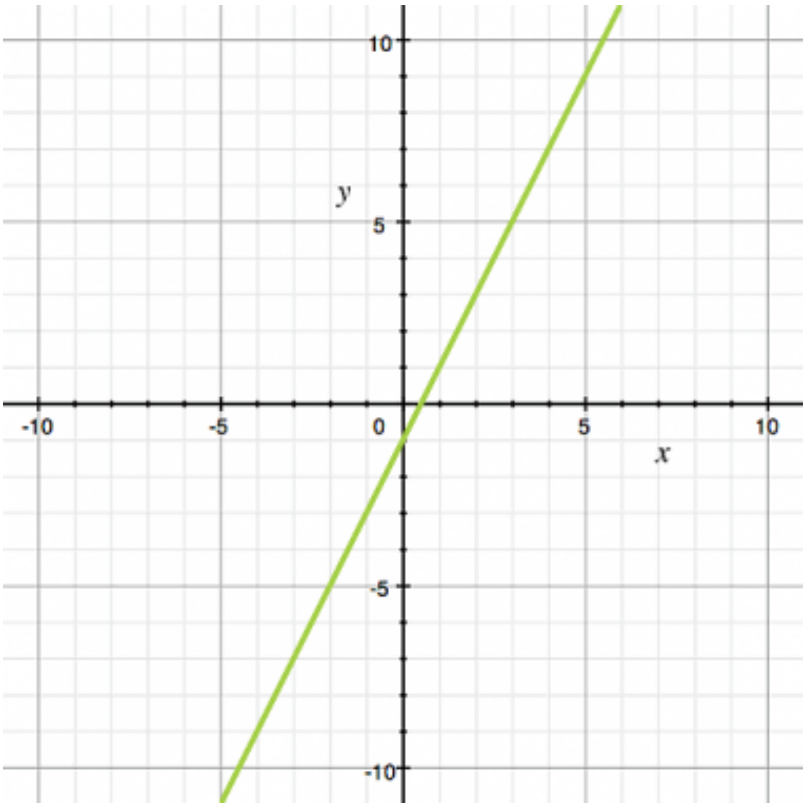
C)


750
675
600
525
450
375
300
225
150
75
0
0 1 2 3 4 5 6 7 8 9 10

D)


750
675
600
525
450
375
300
225
150
75
0
0 1 2 3 4 5 6 7 8 9 10

17)

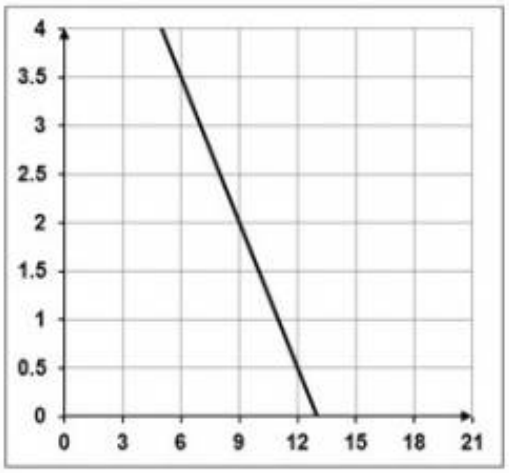


The function shown in the graph is

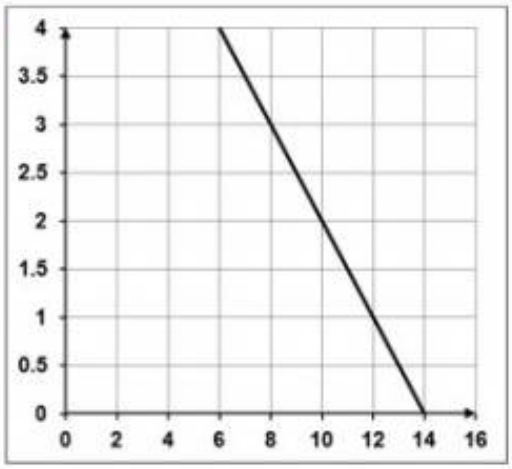
A) f(x) = x - 1
B) f(x) = 2x - 1
C) f(x) = x - 0.5
D) f(x) = 2x - 0.5

18)

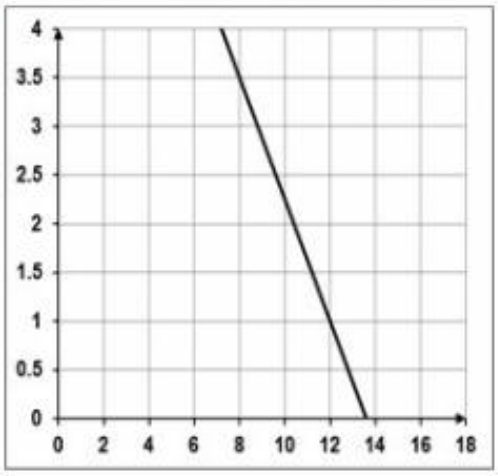
A)



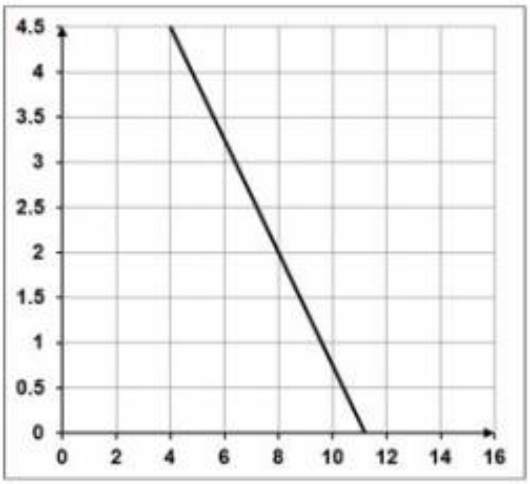
B)



C)



D)



A straight railway track passes through the coordinates (8, 3) and (12, 1).

Which graph shows the path of the railway track?

A)
B)
C)
D)

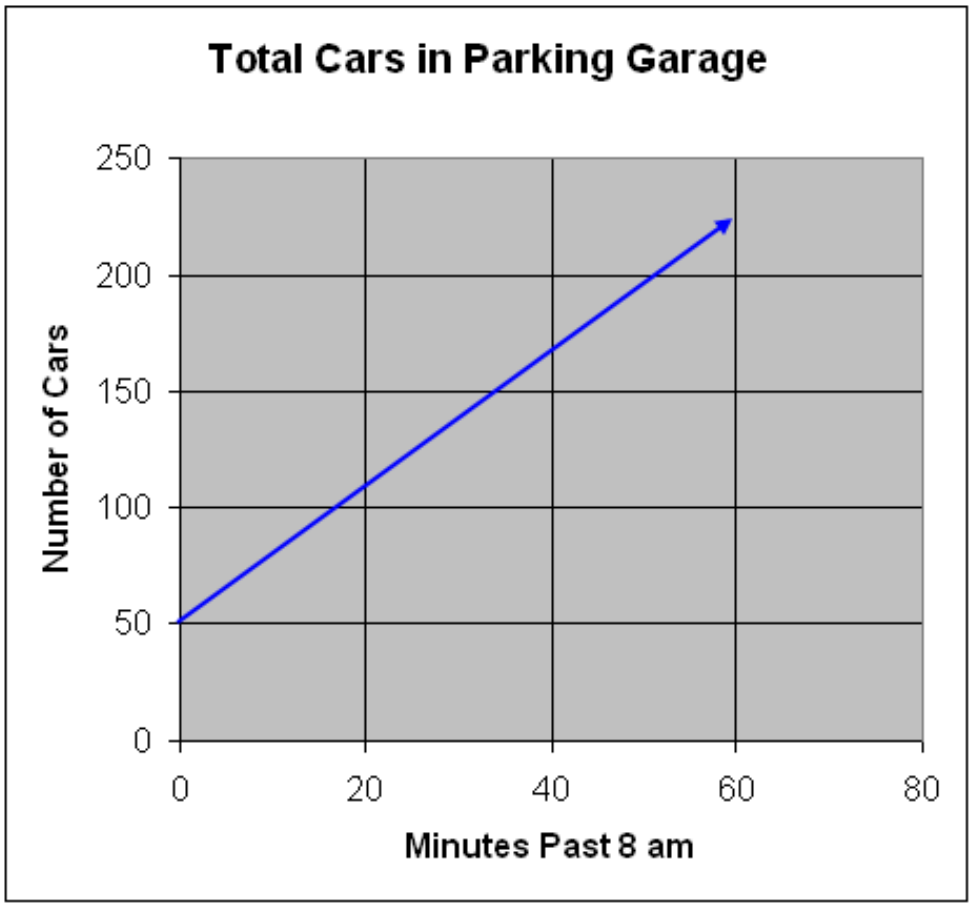
19) Jana blows up the same number of balloons as Jeremy, places half of them in the living room, and ties the rest to the mailbox.

Jeremy places some of his balloons in the kitchen and the rest in the dining room.

Which equation represents how many balloons were placed in each location?

A) $2 + 6 = 5 + 4$
B) $3 + 5 = 6 + 3$
C) $3 + 4 = 1 + 7$
D) $4 + 4 = 3 + 5$

20)



Which equation is modeled by the graph? What is the estimated change in the number of cars in the parking garage for each minute after 8 a.m.?

A) y = 3x + 50; 3 cars per minute
B) y = 4x + 50; 4 cars per minute
C) y = 3x - 50; 3 cars per minute
D) y = -3x + 50; -3 cars per minute

21) The length of a rectangle is represented by x and the width by y. The square of the diagonal of the rectangle is equal to the sum of the squares of the length and the width. If the diagonal is 75 meters, which quadratic equation models this relationship?

A) $x^2 + y^2 = 75$
B) $x^2 + y^2 = 75^2$
C) $x^2 - y^2 = 75^2$
D) $(x + y)^2 = 75^2$

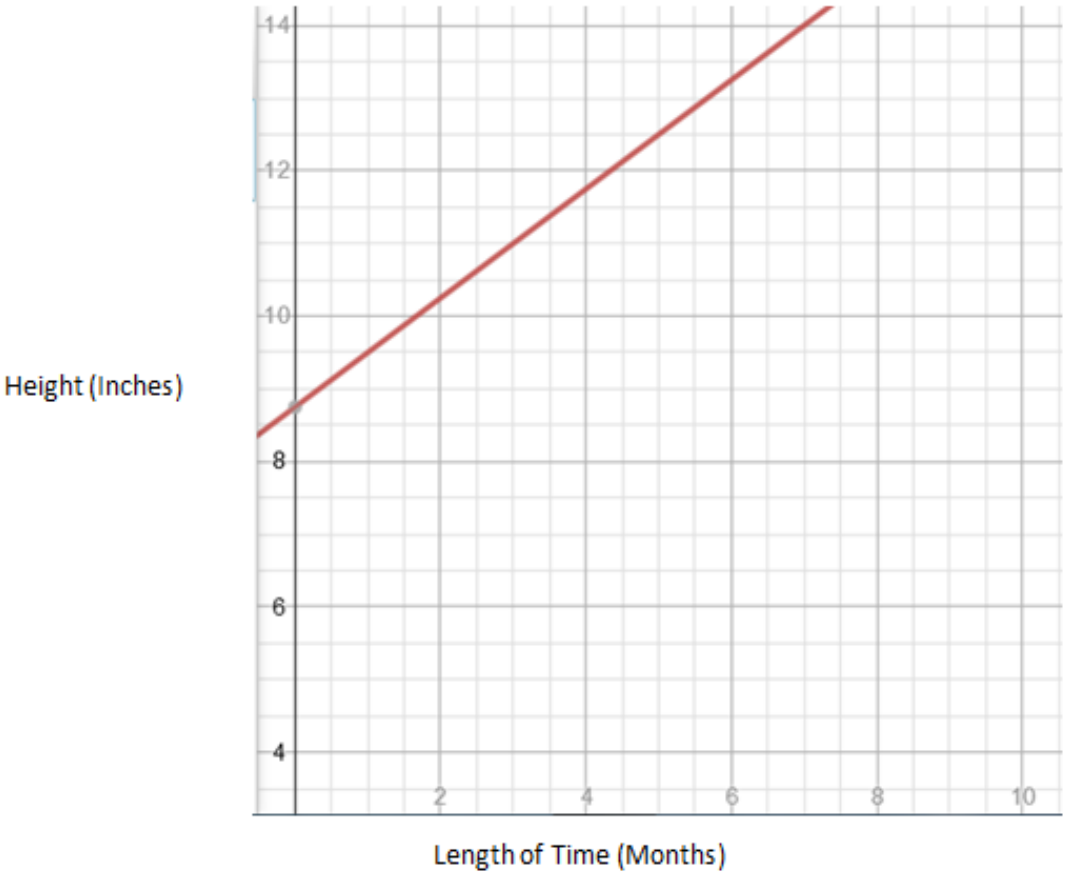
22) The length of rectangle is represented by x and the width by y. The square of the diagonal of the rectangle is equal to the sum of the squares of the length and the width. If the length is 25 meters and the diagonal is 45 meters, which quadratic equation could be used to determine the width of the rectangle?

A) $45^2 + x^2 = y^2$
B) $25^2 + y^2 = 45^2$
C) $x^2 + 25^2 = 45^2$
D) $(25 + y)^2 = 45^2$

23) A parabola with vertex (h, k) and a vertical axis of symmetry is modeled by the equation $y - k = a(x - h)^2$. Determine the vertex for a parabola modeled by $y - 4 = \frac{1}{2}(x + 1)^2$.

A) (1, 4)
B) (−1, 4)
C) (1, −4)
D) (−1, −4)

24)



Ashley is keeping track of the growth of a bamboo plant. When she purchased the plant last month its height was 8.75 inches. Its height today is 9.5 inches. Assuming that the growth rate remains unchanged, which equation models the height of the bamboo plant after x months of growth? Using the graph, estimate the height of the plant in 6 months.

A) y = .75x; about 11 inches
B) y = x + 9.5; about 15 inches
C) y = 8.75x; about 52.5 inches
D) y = .75x + 8.75; about 13.25 inches

25) A parabola with vertex (h, k) and a vertical axis of symmetry is modeled by the equation $y - k = a(x - h)^2$. Determine the vertex for a parabola modeled by $y = (x - 5)^2 + 8$

A) (5, 8)
B) (−5, 8)
C) (5, −8)
D) (−5, −8)

26) A parabola with vertex (h, k) and a vertical axis of symmetry is modeled by the equation $y - k = a(x - h)^2$. The equation for the

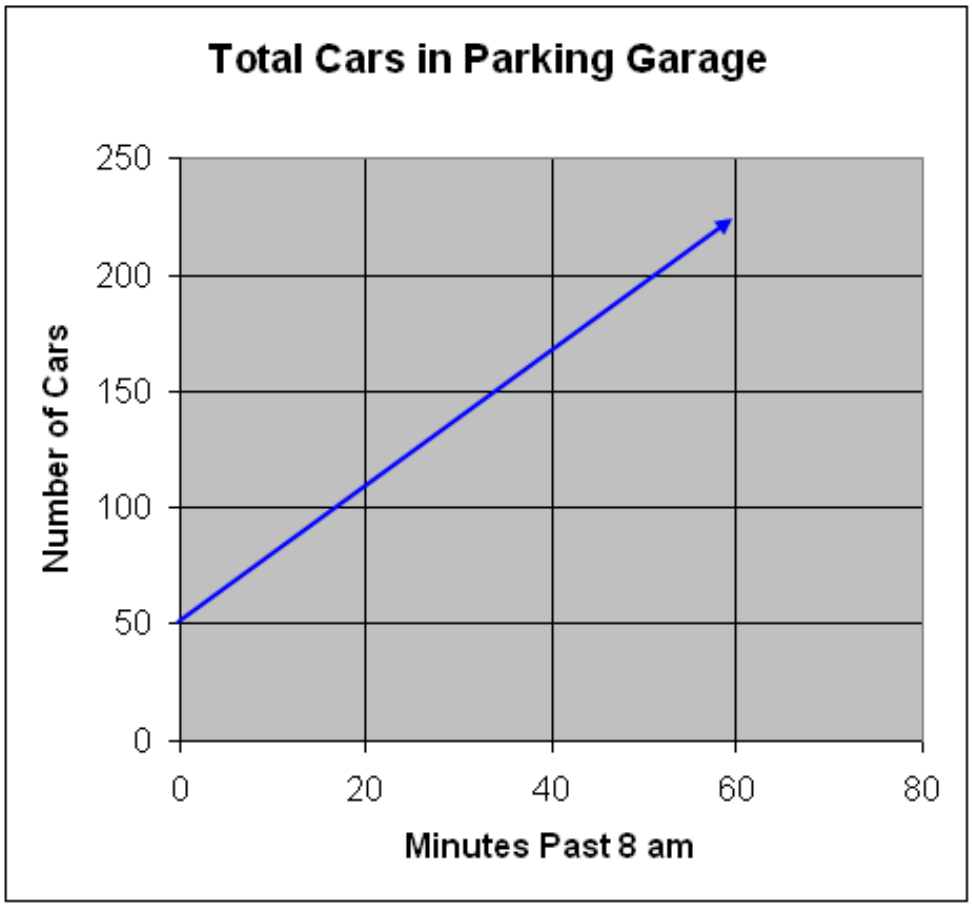
axis of symmetry for the parabola is x = h. Determine the equation for the axis of symmetry for a parabola modeled by $y - 4 = \frac{1}{2}(x + 1)^2$.

A) x = 4
B) x = 1
C) x = −1
D) x = −4

27) The equation for a circle with center (h, k) is $(x - h)^2 + (y - k)^2 = r^2$. If a circle is modeled by the equation $(x - 4)^2 + (y + 6)^2 = 49$, what is the center of the circle?

A) (4, 6)
B) (4, −6)
C) (−4, 6)
D) (−4, −6)

28)



Which equation is modeled by the graph? Using the equation, about how many more cars are in the deck at 9:00 a.m. than at 8:30 a.m.?

A) y = 3x + 50; 90 cars
B) y = 4x + 50; 75 cars
C) y = x + 50; 100 cars
D) y = 3x - 50; 120 cars

29) The equation for a circle with center (h, k) is $(x - h)^2 + (y - k)^2 = r^2$. If a circle is modeled by the equation $x^2 + (y + 6)^2 = 100$, what is the center of the circle?

A) (0, 6)
B) (6, 0)
C) (0, −6)
D) (−6, 0)

30)

Boiling Point:
100°C
212°F
Freezing Point:
0°C
32°F

Which formula could be used to convert degrees Celsius to degrees Fahrenheit?

A) $F = 2C + 12$

B) $F = \frac{5}{9}C + 32$

C) $F = \frac{9}{5}C + 32$

D) $F = \frac{1}{2}C + 162$