Math - Answer Sheet

1) What is the value of *w*?

$$\frac{w+3}{4} = \frac{w-2}{2}$$

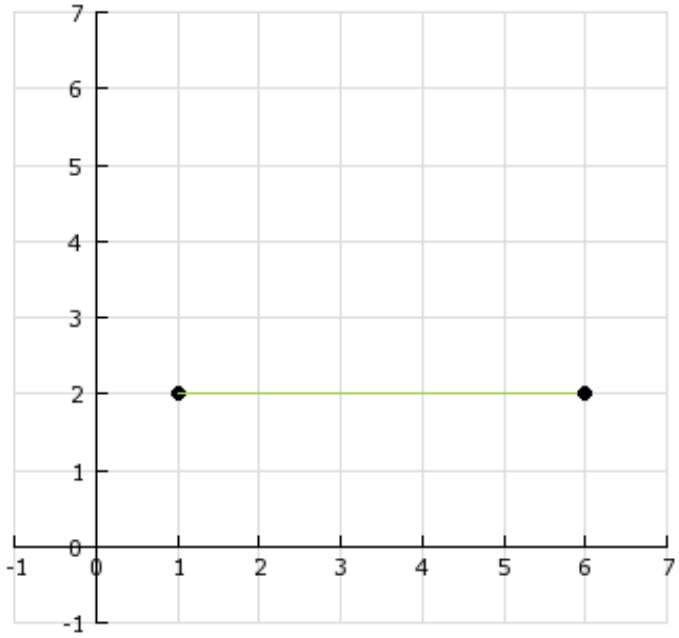
A) 7
B) 9
C) 11
D) 13

2) Solve the equation.

$$-4(3 - 2x) + 2x = 2x - 8$$

A) x = 2
B) x = -1
C) $x = \frac{1}{2}$
D) $x = \frac{1}{3}$

3)



What is the slope of the line segment graphed here?

A) -1
B) 0
C) 1
D) 5

4) Solve.

5y - 10 = -25.

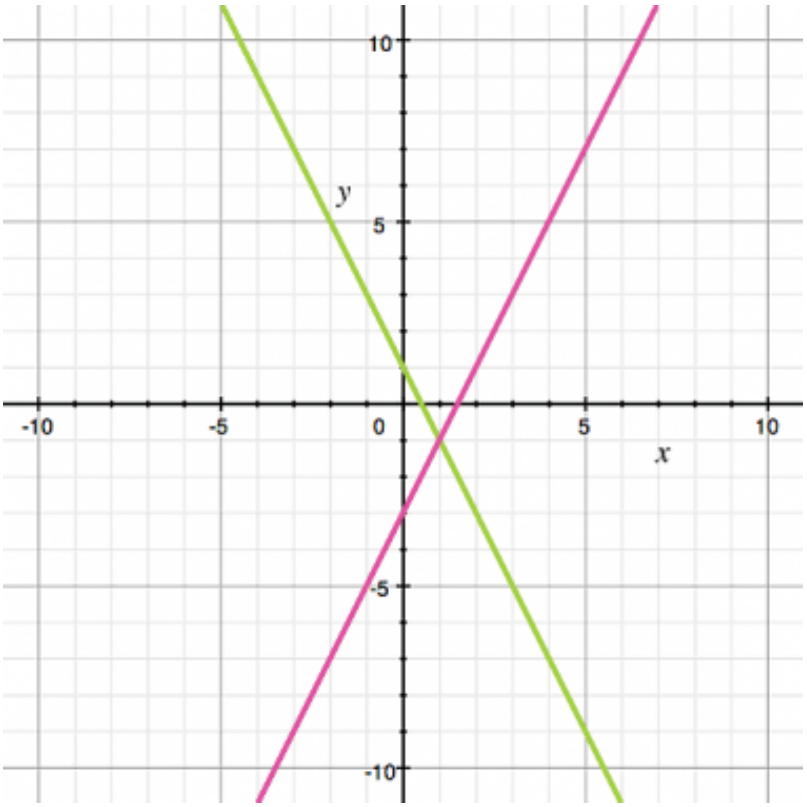
A) y = 3
B) y = 7
C) y = -3
D) y = -7

5) Solve:

$\frac{r}{5} - 6 = -1$

A) r = 1
B) r = 5
C) r = 10
D) r = 25

6)



The graph shows the solution to which system of equations?

A) y = x + 2 and y = -x - 4
B) y = 3x + 7 and y = x + 12
C) y = 2x - 3 and y = −2x + 1
D) y = -x + 4 and y = −2x + 5

7) Evaluate.

$$\frac{2^5}{2^3}$$

A) 1
B) 2^8
C) 4
D) 8

8) Simplify.

$$\sqrt{\frac{400}{4}}$$

A) 5
B) 10
C) 20
D) 50

9) Express the number in scientific notation.

$$0.00341 \times 10^4$$

A) 3.41×10^{-3}
B) 3.41×10^{-1}
C) 3.41×10^1
D) 3.41×10^4

10) Simplify.

$$(2^2)^{-3}$$

A) 64
B) -64
C) $\frac{1}{64}$
D) $-\frac{1}{64}$

11) Simplify.

$$(4^3)^5$$

A) 4^{-2}
B) 4^3
C) 4^8
D) 4^{15}

12) Solve for *x*.

$$-3x + 4 = -8$$

A) x = 4
B) x = -4
C) No Solution
D) $x = -\frac{4}{3}$

13) Americans consume about 13,150,000,000 gallons of carbonated drinks each year. Express this number in scientific notation.

A) $.1315 \times 10^{11}$

B) 1.315×10^{10}

C) 1.315×10^{11}

D) 13.15×10^{9}

14) Simplify.

$$3^2 \cdot 3^4 \cdot 3^6$$

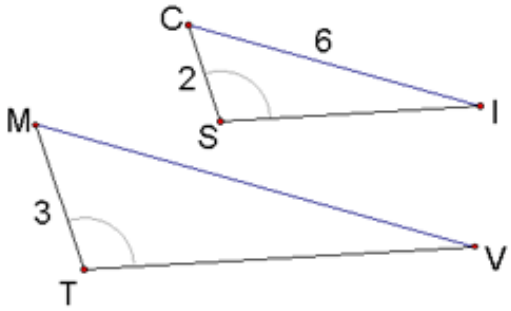
A) 3^0

B) 3^{10}

C) 3^{12}

D) 3^{48}

15)



The triangles shown are similar. Find MV.

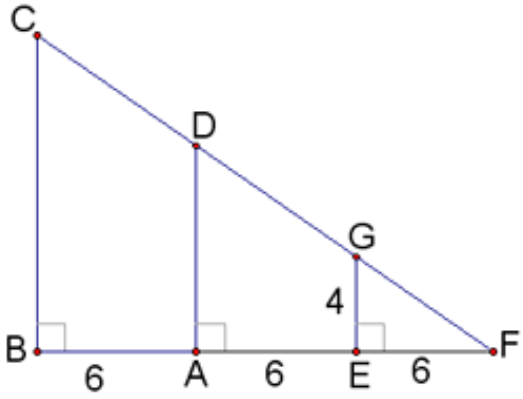
A) 2

B) 3

C) 7

D) 9

16)



Solve for BC.

A) 12

B) 10

C) 8

D) 6

17) A state park has two pools. The olympic size pool holds 8.12×10^5 gallons of water and the smaller pool holds 5.27×10^5 gallons of water. What is the combined capacity of the pools?

A) 1.339×10^4 gallons

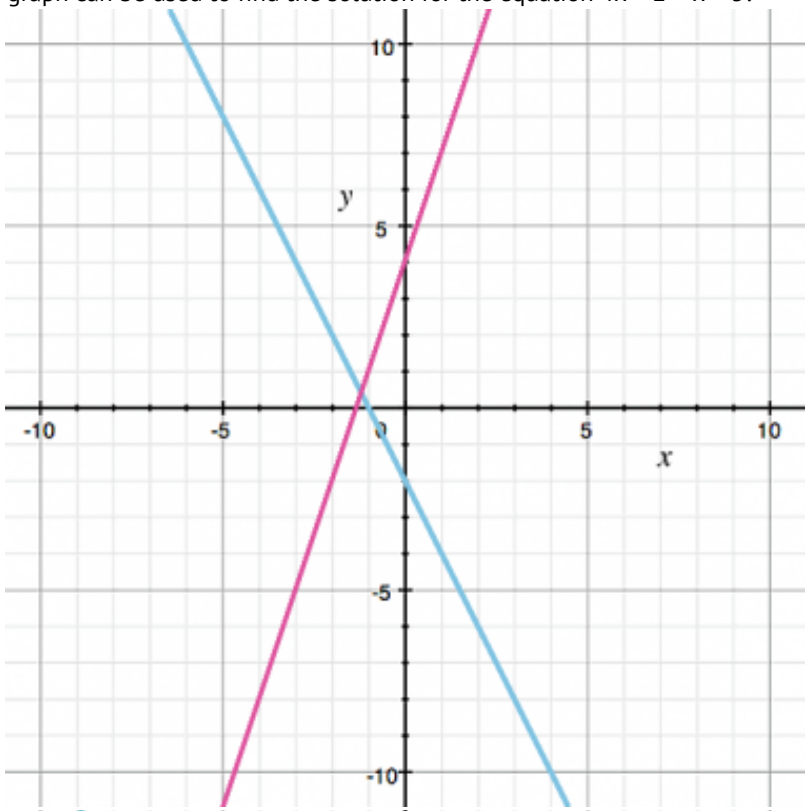
B) 1.339×10^6 gallons

C) 13.39×10^{10} gallons

D) 1.339×10^{10} gallons

18) Which graph can be used to find the solution for the equation $4x + 2 = x + 3$?

A)



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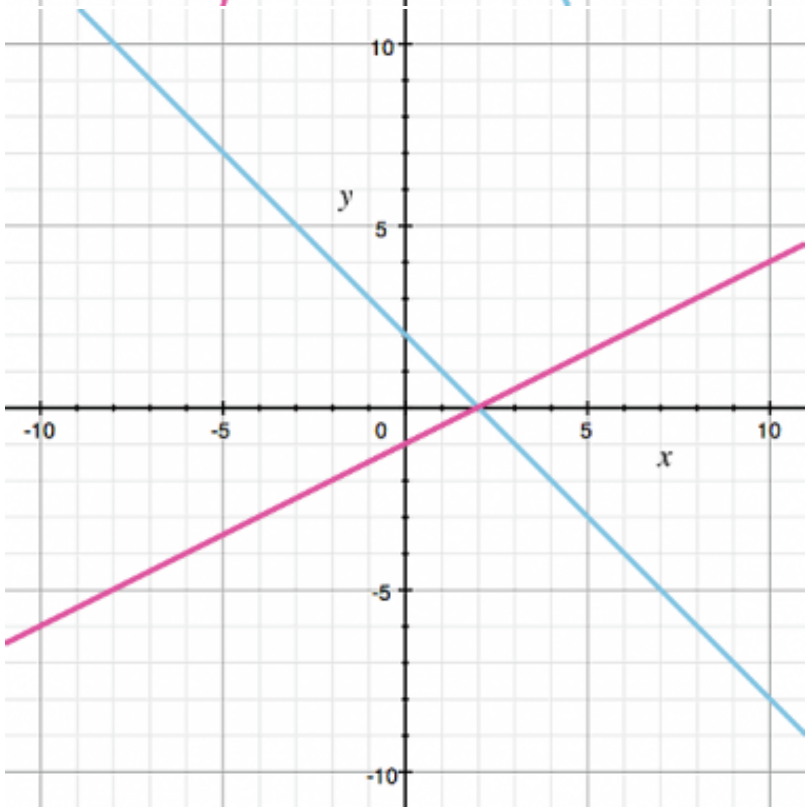

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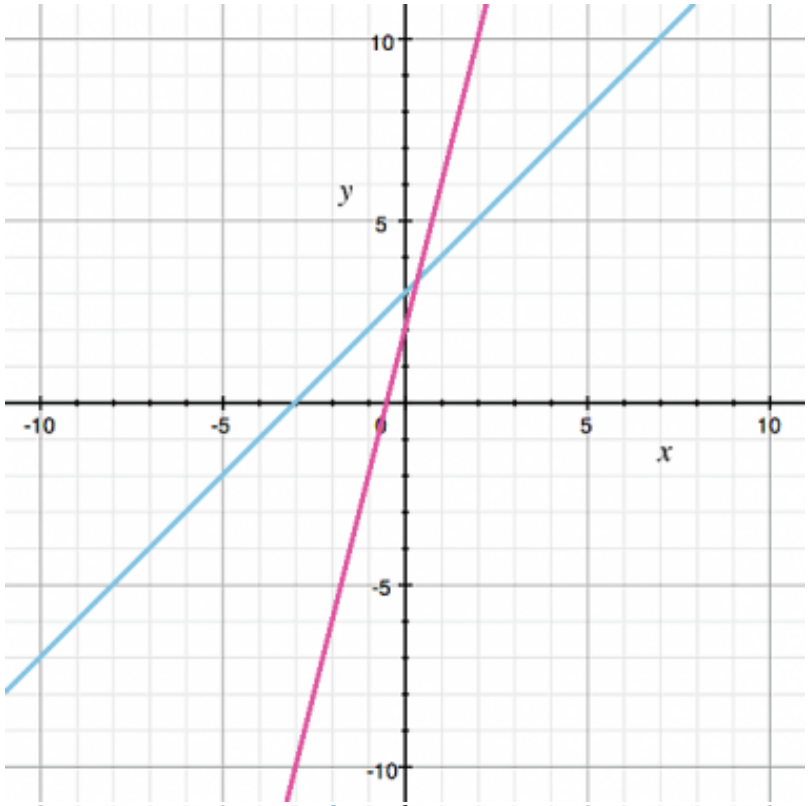

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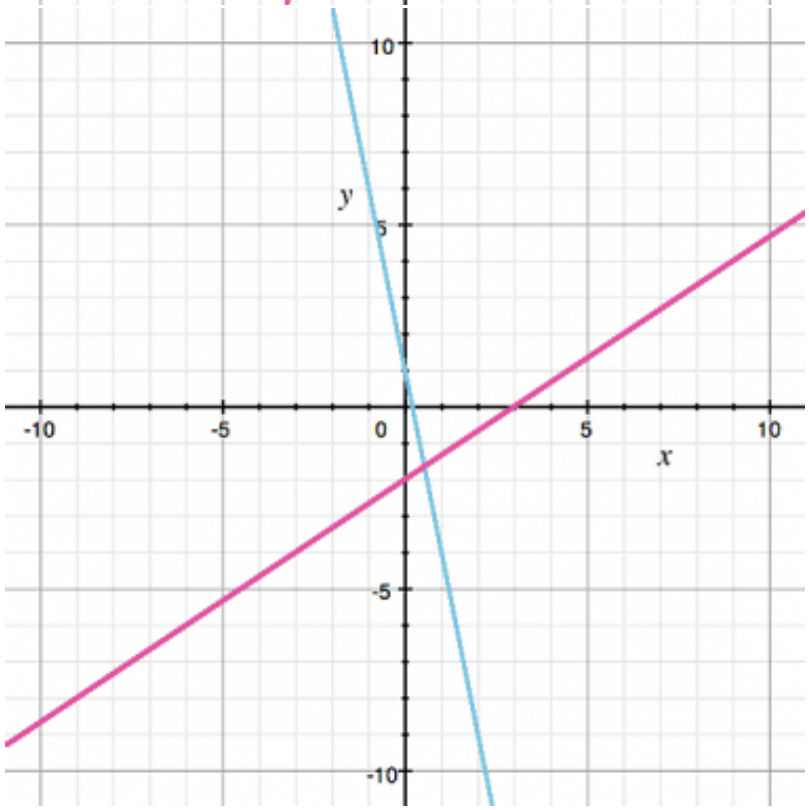
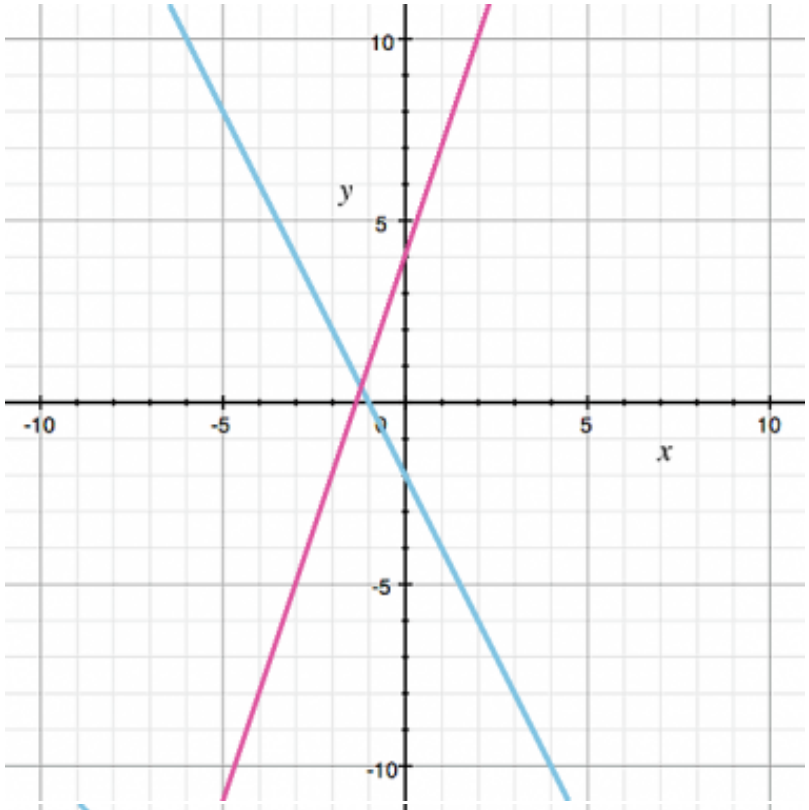


19) Which graph represents the solution for the equation $\frac{2}{3}x - 2 = -5x + 1$?

A)



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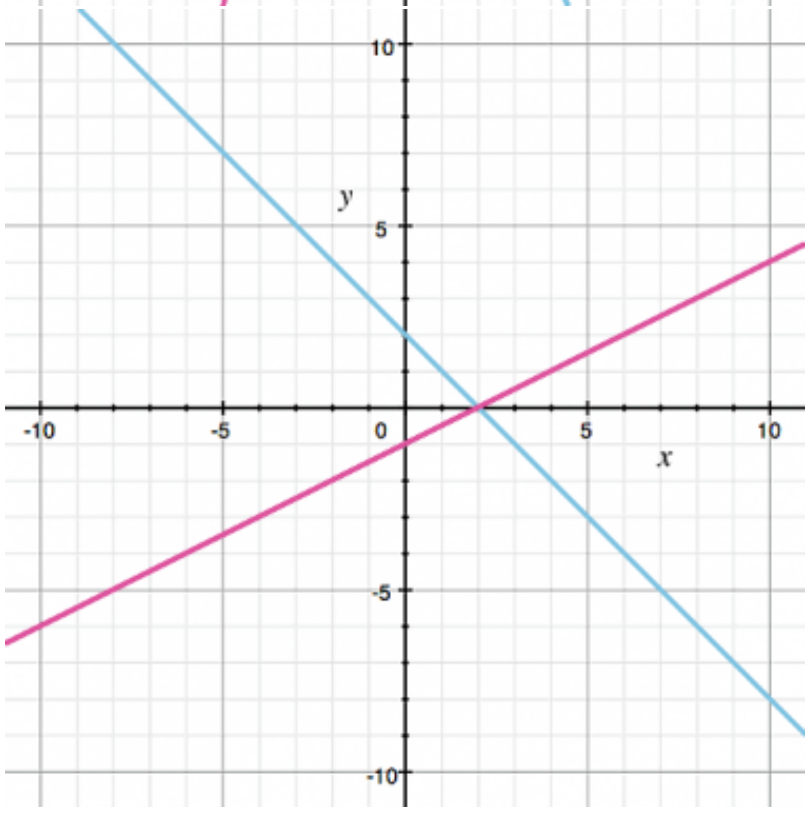

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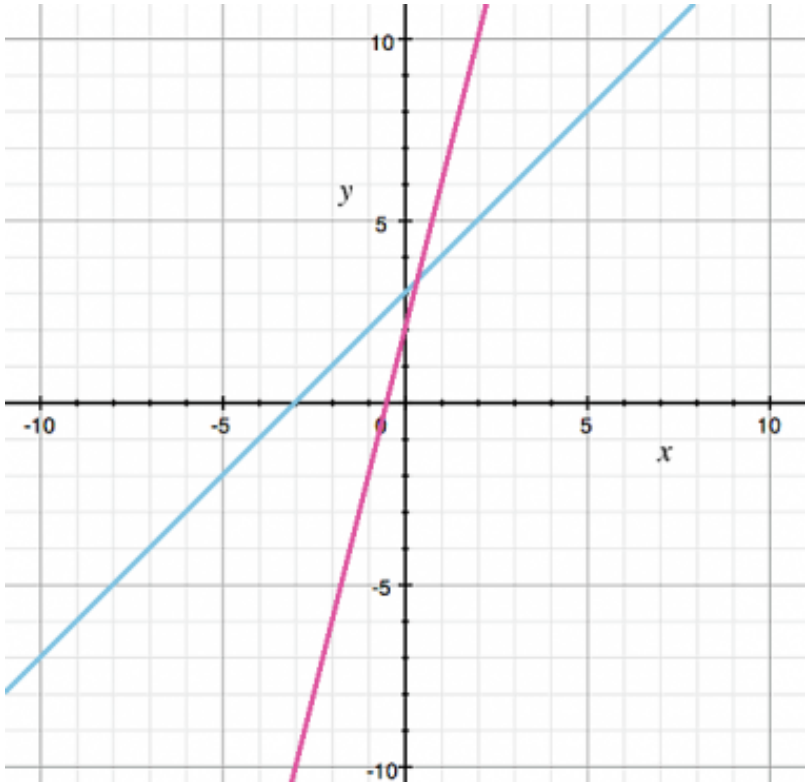

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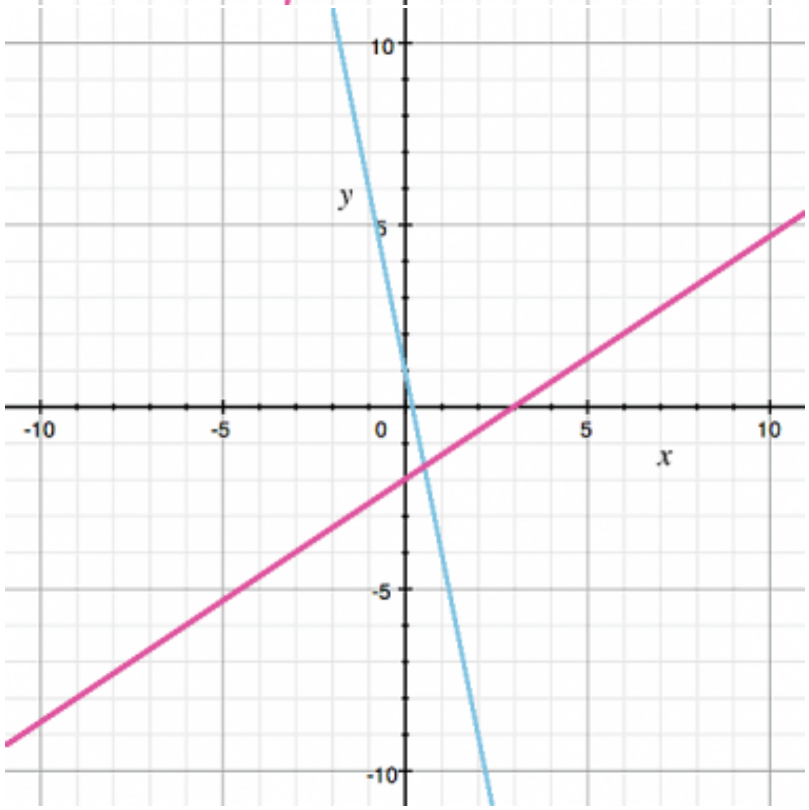


20) Divide (8.6×10^8) by (3.2×10^3). Express your answer in scientific notation.

A) $.26875 \times 10^6$

B) 2.6875×10^5

C) 2.6875×10^{11}

D) 26.875×10^{24}

21) For every 6 boxes sold, Stephanie makes a profit of $8.10. Which table shows this same rate of change?

A

Number of Boxes	Profit
15	$20.25
17	$22.95
19	$25.65
21	$28.35

B

Number of Boxes	Profit
8	$10.80
10	$12.15
12	$13.50
14	$14.85

C

Number of Boxes	Profit
15	$13.25
17	$18.95
19	$21.65
21	$24.35

D

Number of Boxes	Profit
8	$14.85
10	$16.20
12	$17.55
14	$18.90

A) **A**
B) B
C) C
D) D

22)

$$\begin{cases} x + 3y = 7 \\ x - 3y = 1 \end{cases}$$

Solve the system of equations.

A) **x = 4, y = 1**
B) x = 1, y = 4
C) $x = -\frac{2}{3}, y = 3$
D) $x = 3, y = -\frac{2}{3}$

23)

$$\begin{cases} 5x - 2y = 3 \\ -5x + 4y = 9 \end{cases}$$

Solve the system of equations.

A) x = 6, y = 3
B) $x = 6, y = 13\frac{1}{2}$
C) **x = 3, y = 6**
D) x = 1, y = 0

24)

$$\begin{cases} 6x + 3y = 9 \\ 2x + 3y = 1 \end{cases}$$

Solve the system of equations.

A) x = 2, y = -1

B) x = -1, y = 2

C) $x = -\frac{1}{2}, y = 3$

D) $x = 3, y = -\frac{1}{2}$

25) Multiply and answer in scientific notation: $(3.8 \times 10^8)(6.9 \times 10^5)$

A) 2.622×10^{13}

B) 2.622×10^{14}

C) 26.22×10^{13}

D) 26.22×10^{14}

26) Solve.

$$4 + \frac{x}{7} = 2$$

A) -14

B) 10

C) 12

D) 42

27) Solve the equation.

$$x - 8 = 3x$$

A) -6

B) -5

C) -4

D) -3

28) What is 10^3?

A) 100

B) 300

C) 1000

D) 3000

29) Expand 10^6.

A) 60

B) 100,000

C) 1,000,000

D) 10,000,000

30) Simplify: $\sqrt{400} + \sqrt{100} - \sqrt{900}$

A) -400

B) -20

C) 0

D) 20

31) Which square root is a whole number?

A) $\sqrt{144}$

B) $\sqrt{145}$

C) $\sqrt{146}$

D) $\sqrt{147}$

32) Which square root is NOT a whole number?

A) $\sqrt{121}$

B) $\sqrt{134}$

C) $\sqrt{144}$

D) $\sqrt{169}$

33) Which of these tables does NOT represent a function?

A) All of the tables represent functions.

B)

2	6
3	7
4	8

C)

2	6
3	7
4	8

D)

2	6
3	7
4	8

34) Which set is a function?

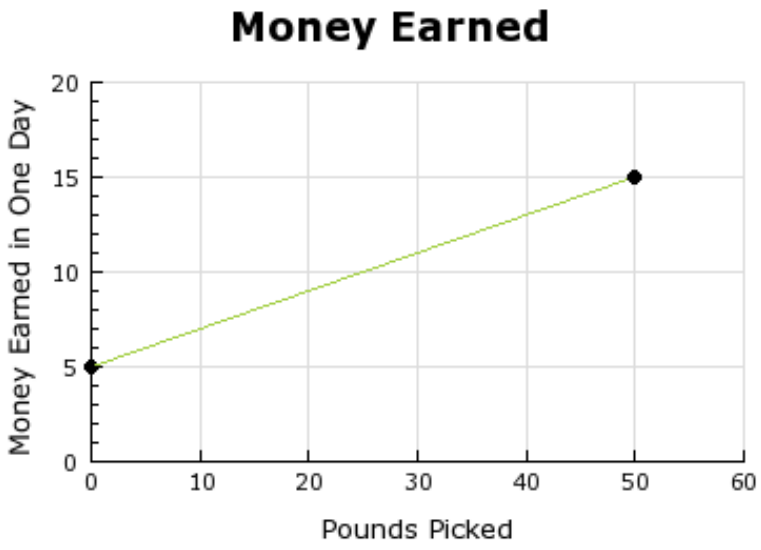
A) {(0,3), (3,0), (0,4), (4,0)}

B) {(0,2), (2,0), (4,6), (6,4)}

C) {(2,6), (3,6), (4,6), (2,0)}

D) {(6,2), (2,0), (4,6), (6,4)}

35)



Which situation matches the graph shown?

A) Jimmy has a summer job, he picks blueberries. He makes $5 a day plus $2 for every pound picked.

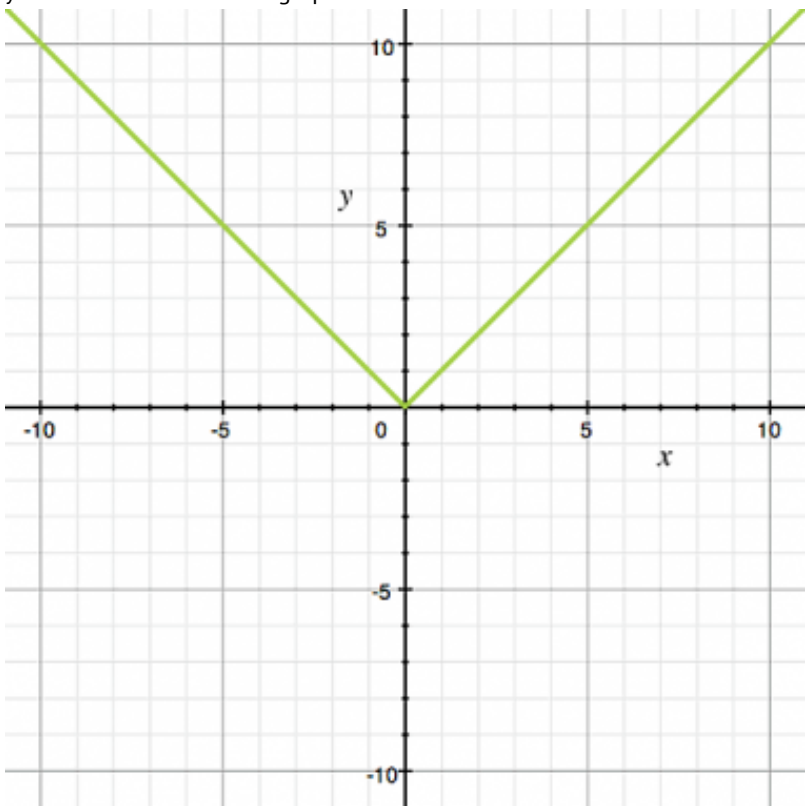
B) Jimmy has a summer job, he picks blueberries. He makes $2 a day plus $5 for every 10 pounds picked.

C) Jimmy has a summer job, he picks blueberries. He makes $2 a day minus $5 for every 10 pounds picked.

D) Jimmy has a summer job, he picks blueberries. He makes $5 a day plus $2 for every 10 pounds picked.

36) Identify the non-linear function graph.

A)



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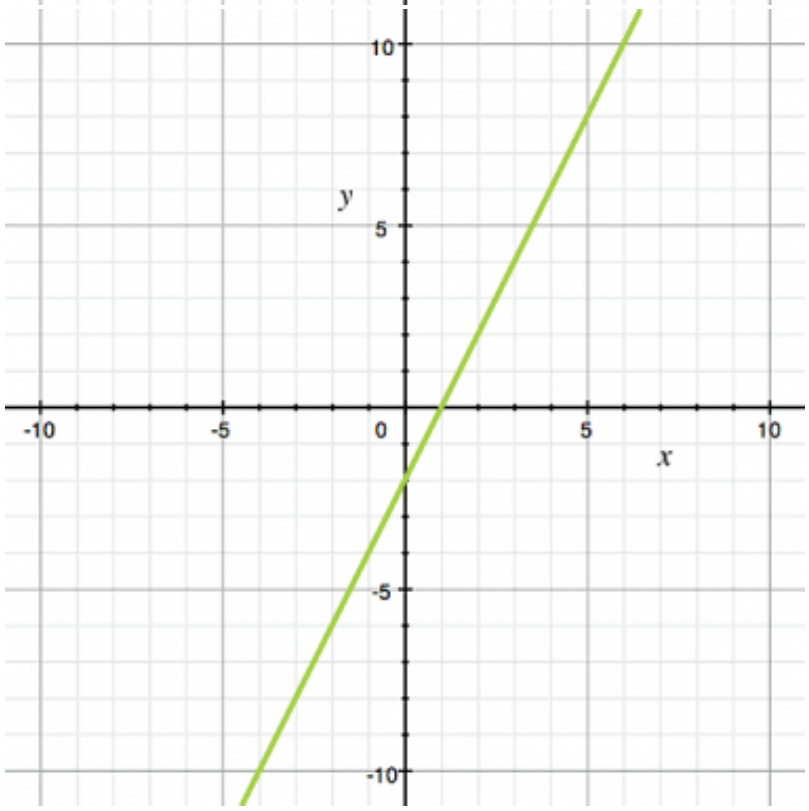
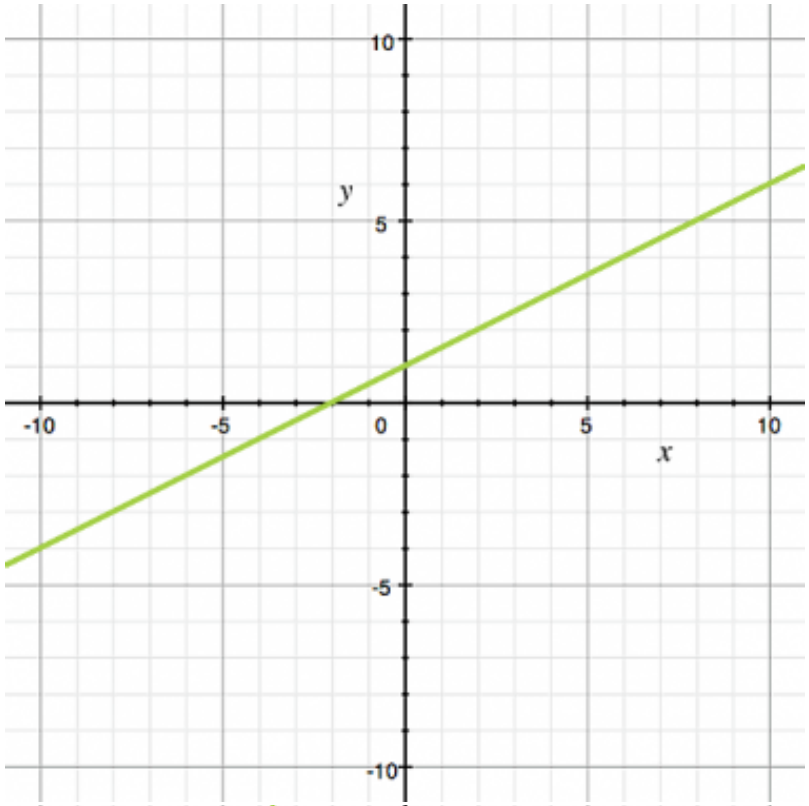
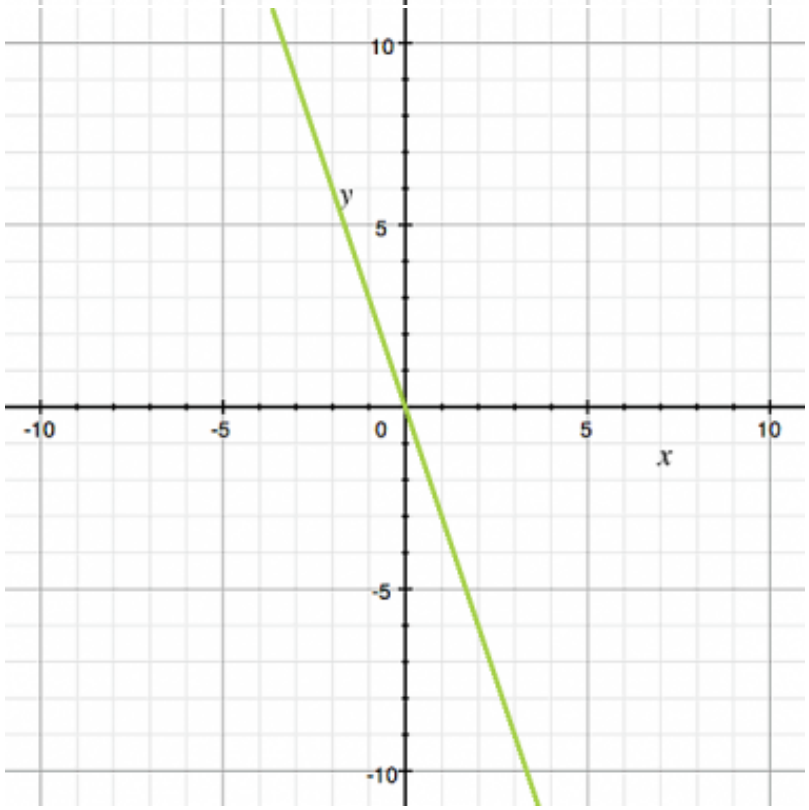


C)

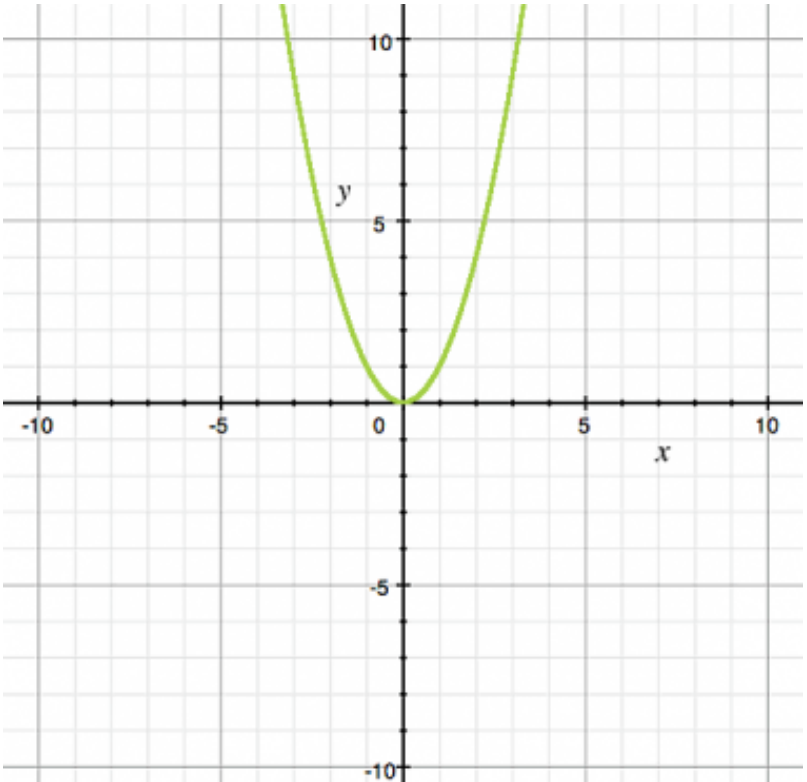


D)



37) Identify the linear function graph.

A)



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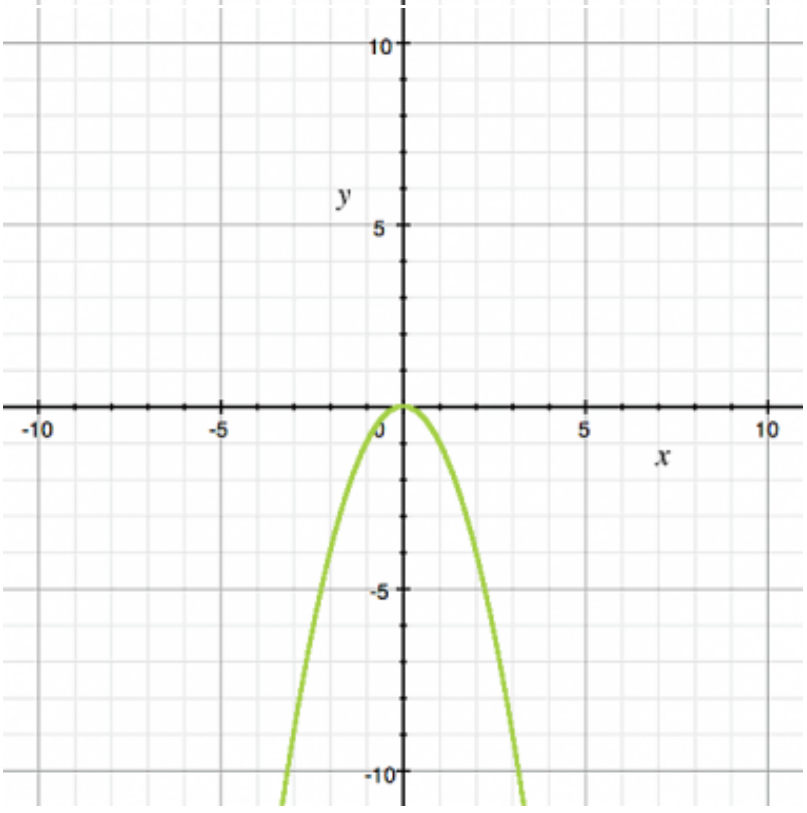
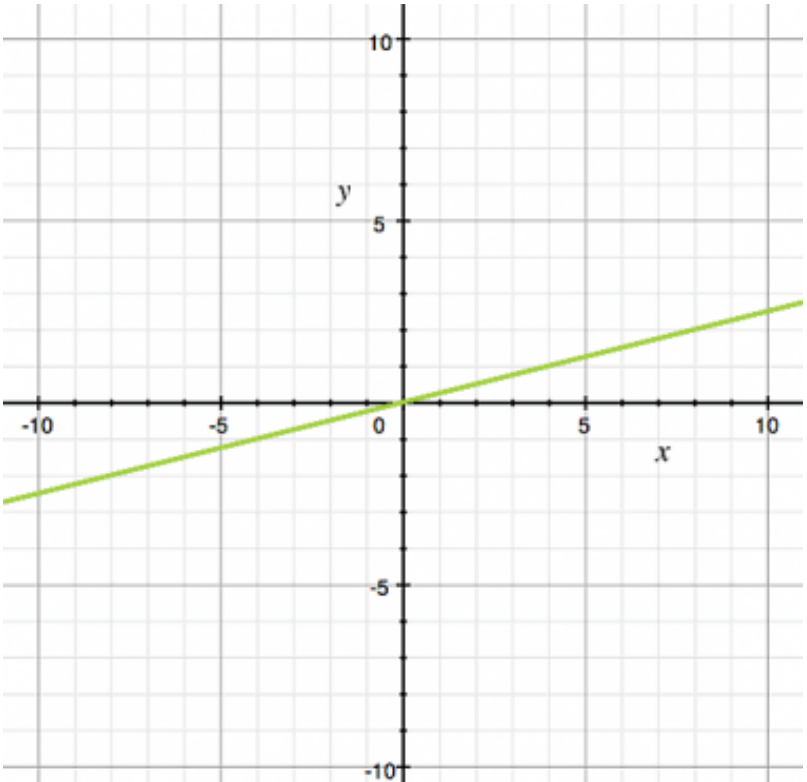
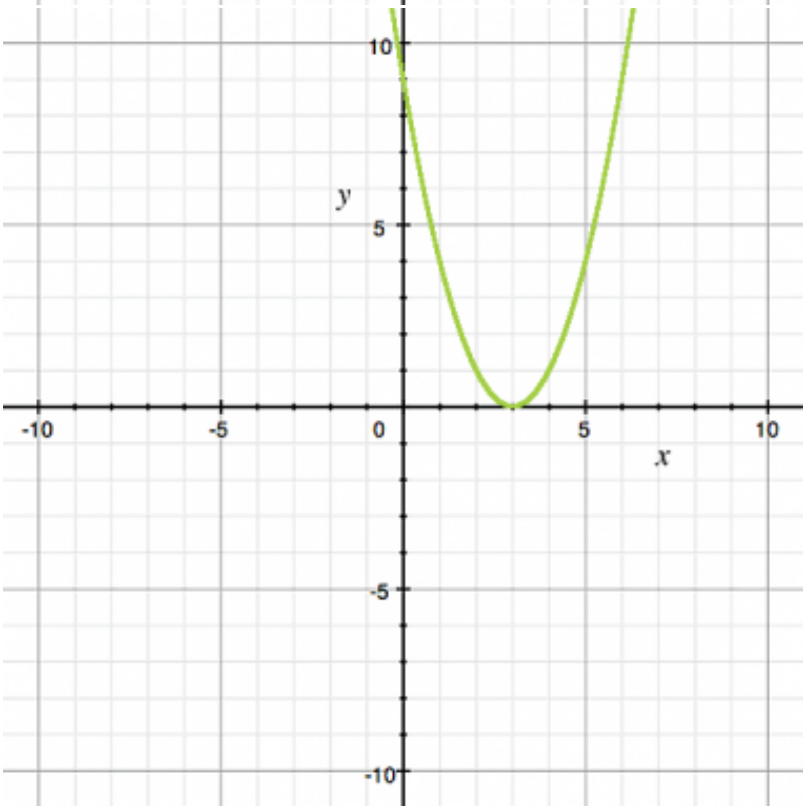


C)



D)

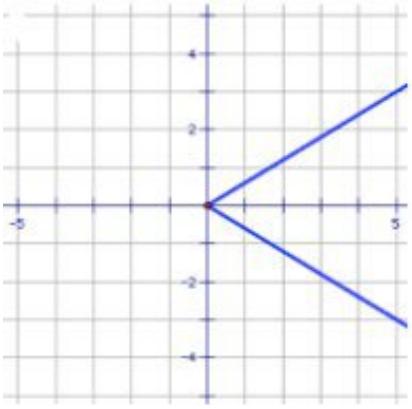


38) The $\sqrt{180}$ falls between which two whole numbers?

A) 11 and 12
B) 12 and 13
C) 13 and 14
D) 14 and 15

39) Which graph represents a function?

A)



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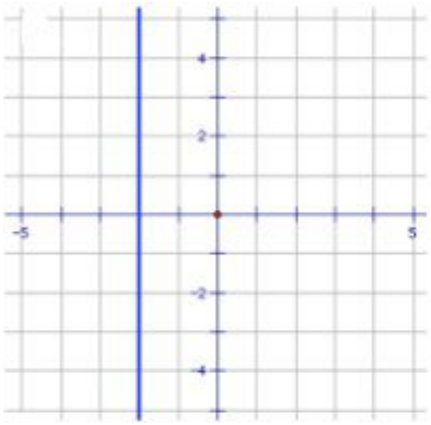

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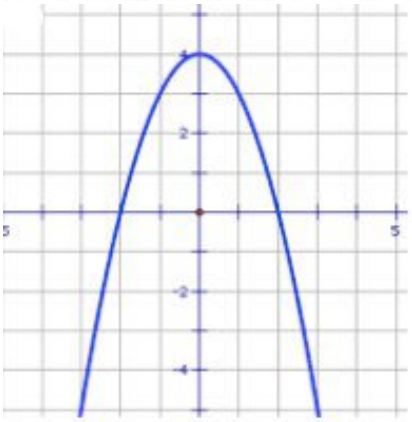
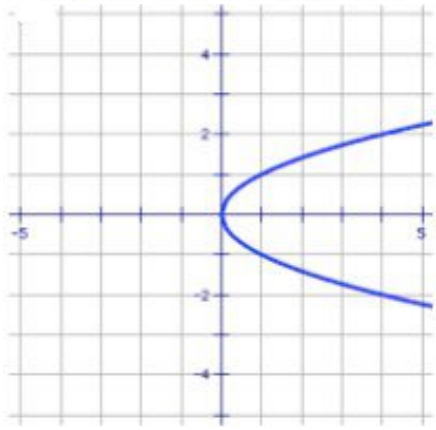


D)



40) Which set of ordered pairs does NOT represent a function?

A) (0, 1), (2, 2), (4, 8), (-2, 7), (5, 8)

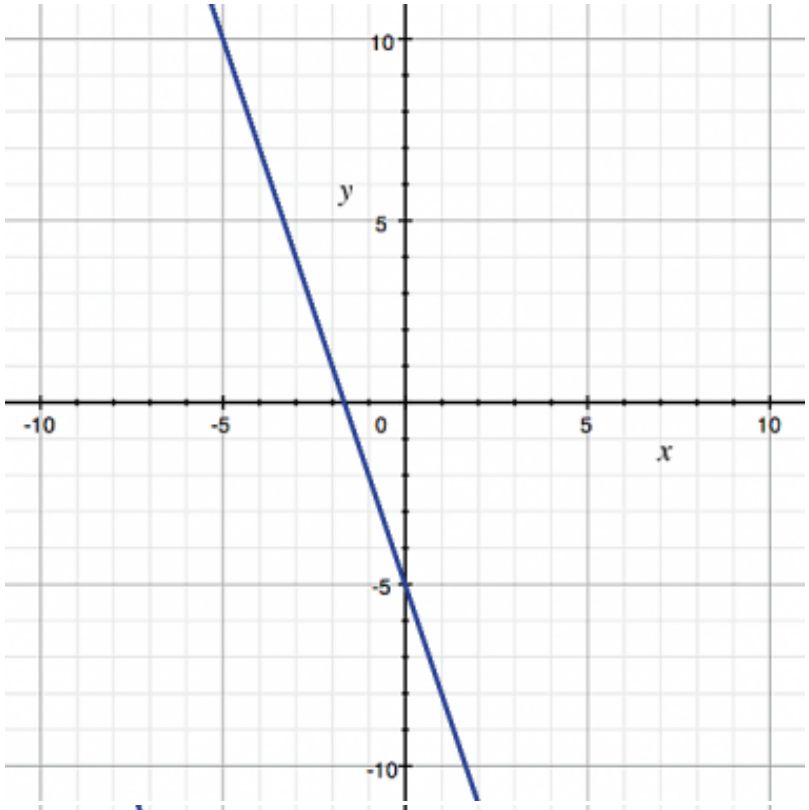
B) (0, 1), (2, 2), (4, 8), (2, 7), (5, 8), (7, 9)

C) (-3, 6), (2, 7), (0, 5), (1, 5), (4, 9), (5, 4)

D) (-4, 2), (-3, 2), (-2, 2), (-1, 2), (0, 2), (1, 2)

41) Which graph has a slope of −3 and passes through the point (−2, −5)?

A)



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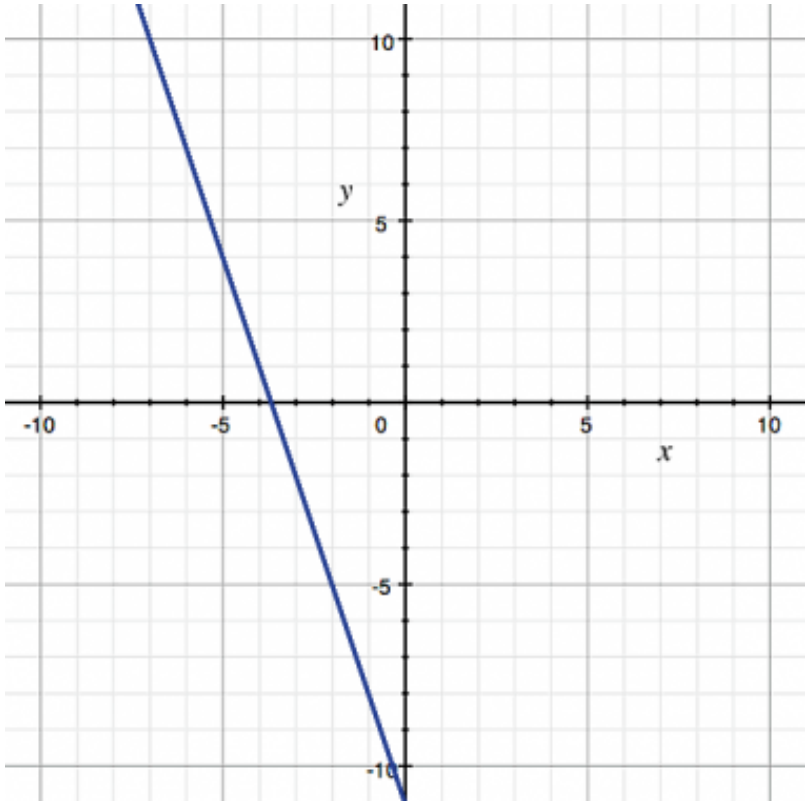

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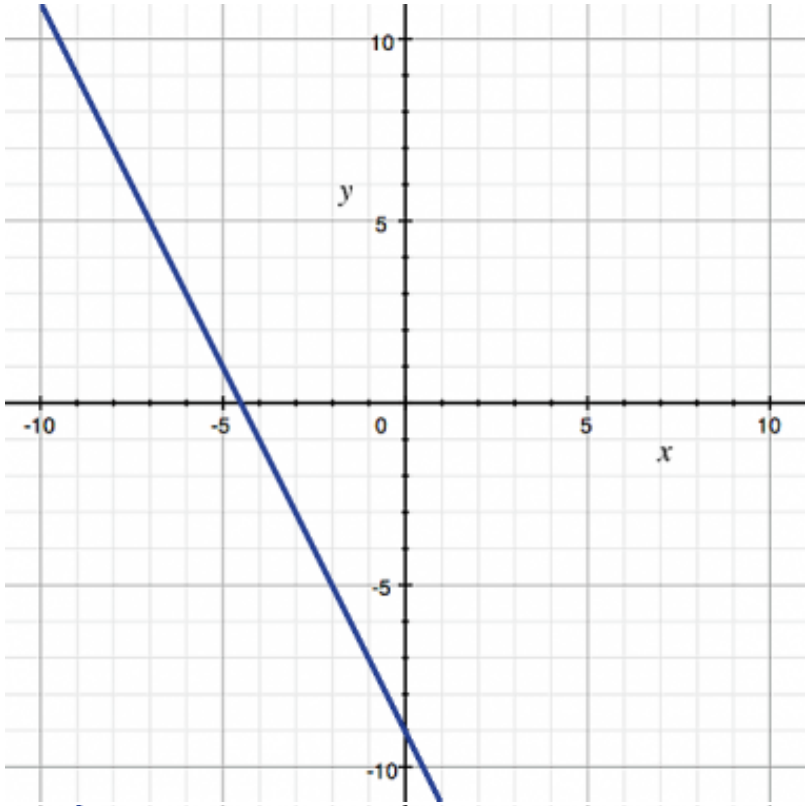

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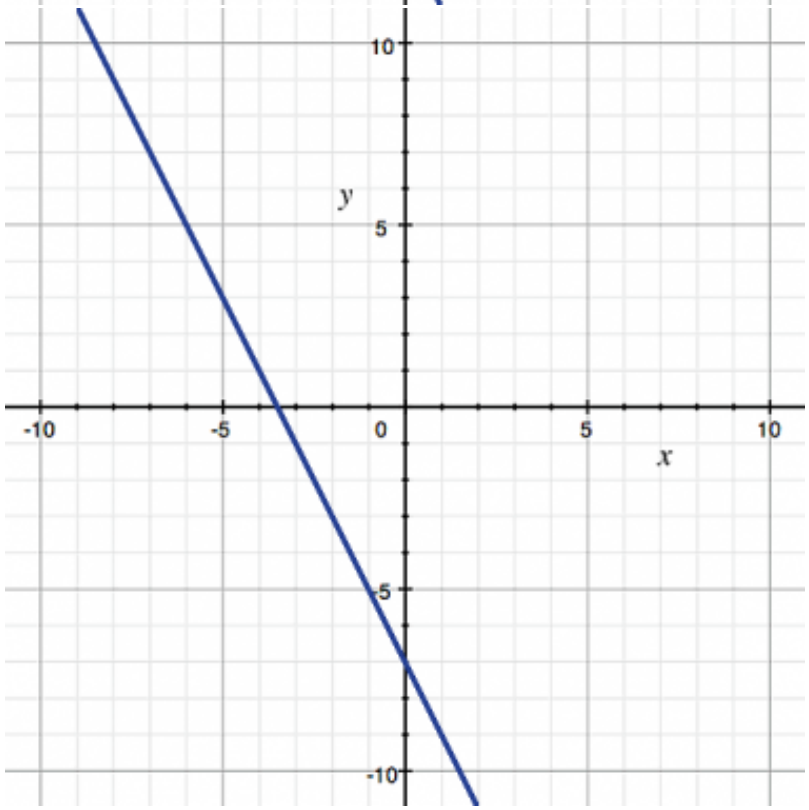

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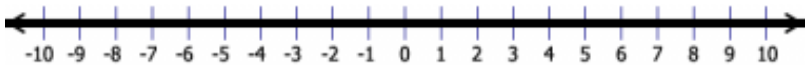


$\sqrt{70}$ is between which two numbers on the number line?

A) 6 and 7
B) 7 and 8
C) 8 and 9
D) 9 and 10

43)

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

44) A school club is raising money for a trip, and needs to reach $10,000. Their fundraising progress is modeled by the function

f(x) = 435 + 1200x, where x is measured in weeks.

What is the meaning of the constant 435?

A) It is the amount they started with.
B) It is the amount still to be raised.
C) It is the amount which is left over.
D) It is the amount they raise each week.

45) Identify the number which is IRRATIONAL.

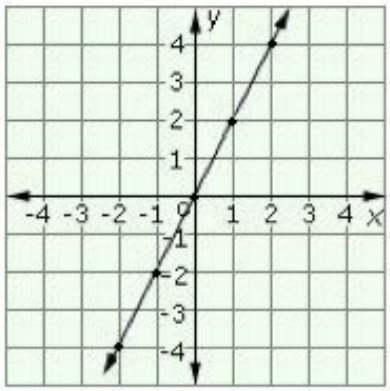
A) $-1.\overline{23}$
B) $\sqrt{8}$
C) $\frac{2}{3}$
D) 0

46) Convert $\frac{5}{11}$ to a decimal using long division.

A) $0.\overline{45}$
B) 2.1
C) 2.2
D) 2.5

47)

Function 1



Function 2

The function whose input x and output y are related by

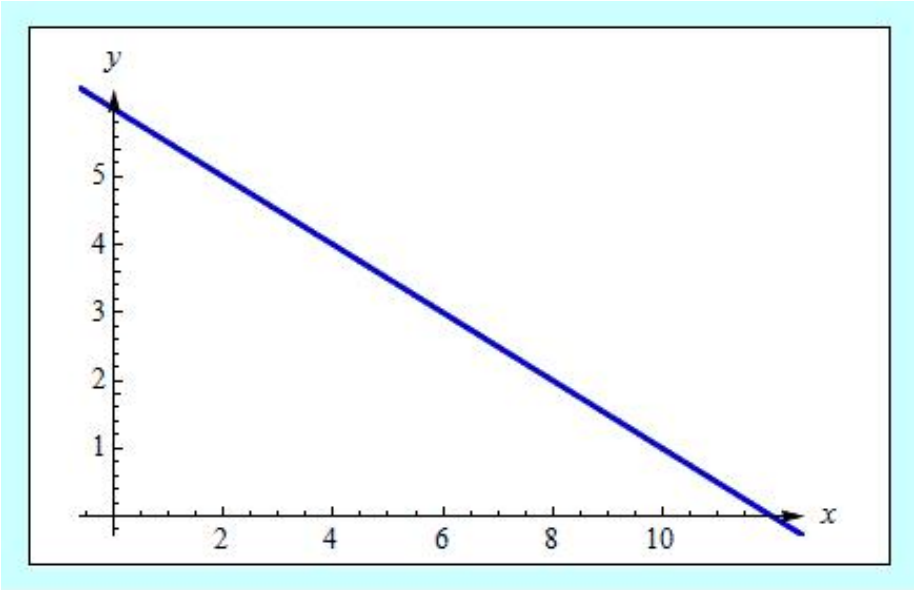
$$y = \frac{1}{2}x + 7$$

Consider the two functions shown here. Which function has the greater rate of change? Explain your answer.

A) Function 1, because the rate of change is 2.
B) Function 2, because the rate of change is ½.
C) Function 2, because the rate of change is 7.

D) Function 1, because the rate of change is ½ .

48)



Which function is represented by the graph?

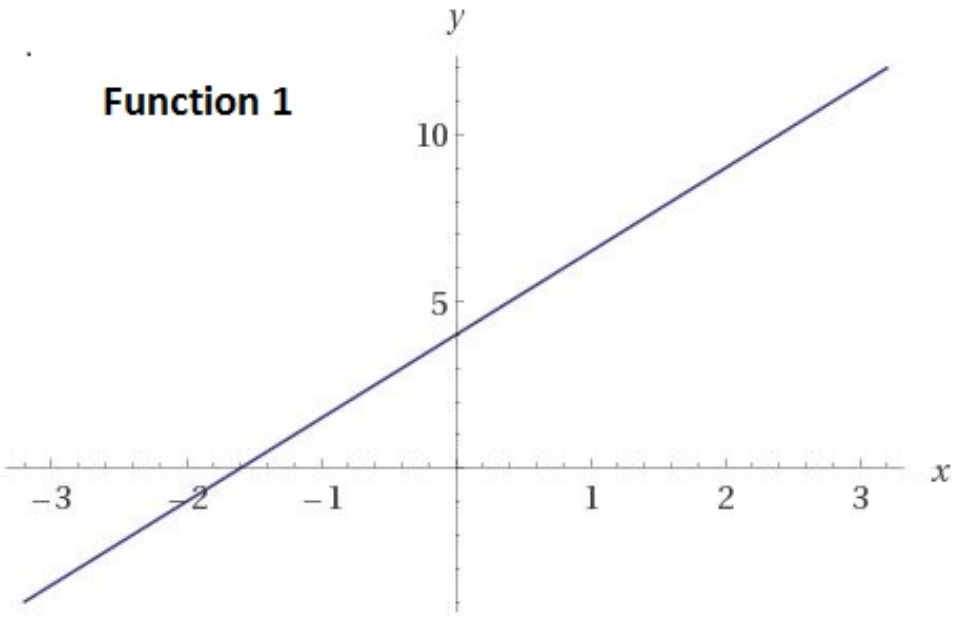
A) f(x) = 2x + 6

B) f(x) = -2x + 6

C) $f(x) = \frac{1}{2}x + 6$

D) $f(x) = -\frac{1}{2}x + 6$

49)



Function 2

x	y
2	11
3	14
4	17
5	20

Consider the two functions. Which statement is true?

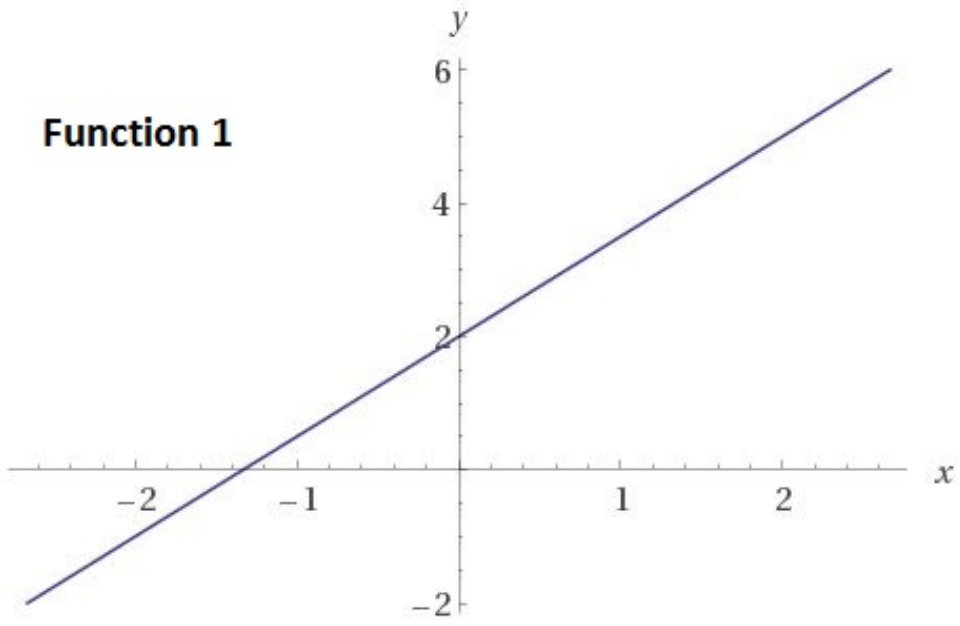
A) Function 1 has a greater rate of change by 2

B) Function 2 has a greater rate of change by 2

C) Function 1 has a greater rate of change by $\frac{1}{2}$

D) Function 2 has a greater rate of change by $\frac{1}{2}$

50)



Function 2

x	y
2	3
3	5
4	7
5	9

Consider the two functions. Which statement is true?

A) Function 1 has the greater y-intercept by 1 unit
B) Function 2 has the greater y-intercept by 1 unit
C) Function 1 has the greater y-intercept by 3 units
D) Function 2 has the greater y-intercept by 3 units