

1. A real number that is an infinite nonrepeating decimal is a(n) _____ number.

- A. rational
- B. irrational
- C. infinite
- D. absolute

2. Calculate the sum using only pencil and paper. $\frac{11}{2} + \frac{19}{20}$

A. $\frac{31}{5}$

B. $\frac{129}{20}$

C. $\frac{347}{60}$

D. $\frac{139}{20}$

E. $\frac{427}{60}$

F. $\frac{36}{5}$

G. $\frac{30}{22}$

H. $\frac{119}{20}$

3. Calculate the sum using only pencil and paper. $6.71+(-3.92)+(-18.35)$

A. -15.59

B. -15.55

C. -14.76

D. -16.56

E. -15.58

F. -14.86

G. -14.96

H. -15.56

4. Calculate the product using only pencil and paper. $-\frac{4}{1} \cdot (-\frac{10}{7}) \cdot \frac{2}{1}$

A. $\frac{160}{7}$

B. $-\frac{320}{7}$

C. $\frac{160}{21}$

D. $\frac{20}{7}$

E. $-\frac{80}{21}$

F. $\frac{240}{7}$

G. $-\frac{60}{7}$

H. $\frac{80}{7}$

5. Simplify the expression by using the distributive property to combine like terms. $(2\sigma + 2\sigma) + (-2\theta - 9\theta)$

A. $4\sigma - 11\theta$

B. $-4\sigma - 11\theta$

C. $4\theta - 11\sigma$

D. $-4\theta + 11\sigma$

E. $-4\sigma + 11\theta$

F. $4\sigma + 11\theta$

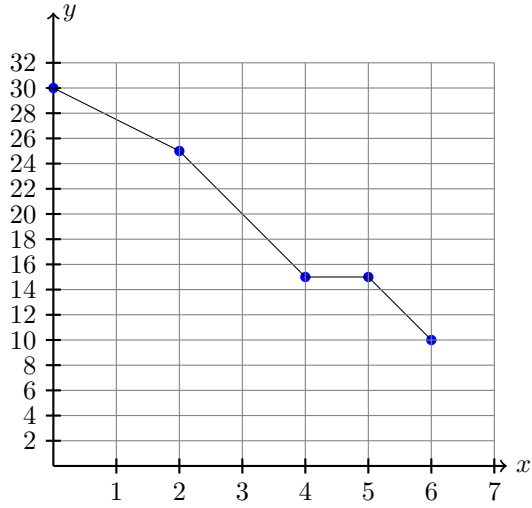
6. Of the following, $b = 1$, $b = \frac{3}{4}$, and $b = \frac{1}{4}$, which IS NOT a solution to the equation $16b^2 - 16b + 3 = 0$?

A. $b = 1$

B. $b = \frac{1}{4}$

C. $b = \frac{3}{4}$

7. The depth of water in a city reservoir was carefully recorded for a 6-month period. The results are displayed in the graph below.



The time x is given in months, and the depth y is given in feet. At 5 months, what was the depth of the water in the reservoir?

- A. The depth of the reservoir was at 15 feet.
- B. The depth of the reservoir was at 10 feet.
- C. 15
- D. 0
- E. 25
- F. 30
- G. The depth of the reservoir was at 30 feet.
- H. The depth of the reservoir was at 25 feet.

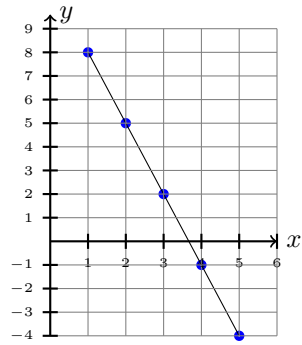
8. Consider the sequence: 8, 5, 2, -1, -4.

Which of the following is a graphical representation of the sequence?

A. $a(1) = 8, a(2) = 5, a(3) = 2, a(4) = -1, a(5) = -4$

B. $(1, 8), (2, 5), (3, 2), (4, -1), (5, -4)$

C.



D.

x	y
1	8
2	5
3	2
4	-1
5	-4

E. $d_1 = 8, d_2 = 5, d_3 = 2, d_4 = -1, d_5 = -4$

9. An airplane has a speed of x mi/h in calm skies. Write a function in terms of x for
- The rate of this airplane traveling in the same direction as a 25-mi/h wind.
 - The rate of this airplane traveling in the opposite direction of a 25-mi/h wind.
 - The distance the airplane travels in 5 hours going in the same direction as a 25-mi/h wind.

A. a. $f(x) = x - 25$ b. $f(x) = x + 25$ c. $f(x) = 5x + 150$

B. a. $f(x) = x + 25$ b. $f(x) = x - 25$ c. $f(x) = 5x + 150$

C. a. $f(x) = x + 25$ b. $f(x) = x - 25$ c. $f(x) = 5x + 125$

D. a. $f(x) = x + 25$ b. $f(x) = x - 25$ c. $f(x) = 5x - 125$

E. a. $f(x) = x - 25$ b. $f(x) = x + 25$ c. $f(x) = 5x + 125$

F. a. $f(x) = x + 25$ b. $f(x) = x - 25$ c. $f(x) = 5x - 150$

G. a. $f(x) = x - 25$ b. $f(x) = x + 25$ c. $f(x) = 5x - 150$

H. a. $f(x) = x - 25$ b. $f(x) = x + 25$ c. $f(x) = 5x - 125$

10. Use the linear function $f(x) = \frac{x+3}{2}$ to complete this table

x	$f(x)$
-2	
-1	
0	
1	
2	

A.

x	$f(x)$
-2	0.5
-1	1
0	1.5
1	2
2	2.5

B.

x	$f(x)$
-2	0.5
-1	1
0	-0.5
1	2
2	2.5

C.

x	$f(x)$
-2	0.5
-1	1
0	1.5
1	-1
2	2.5

D.

x	$f(x)$
-2	0.5
-1	4
0	1.5
1	2
2	2.5

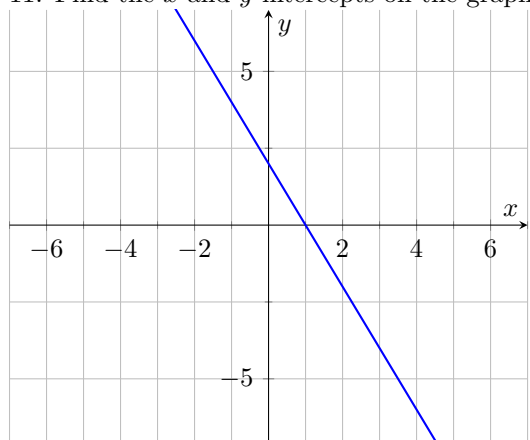
E.

x	$f(x)$
-2	0.5
-1	1
0	1.5
1	2
2	3.5

F.

x	$f(x)$
-2	2.5
-1	1
0	1.5
1	2
2	2.5

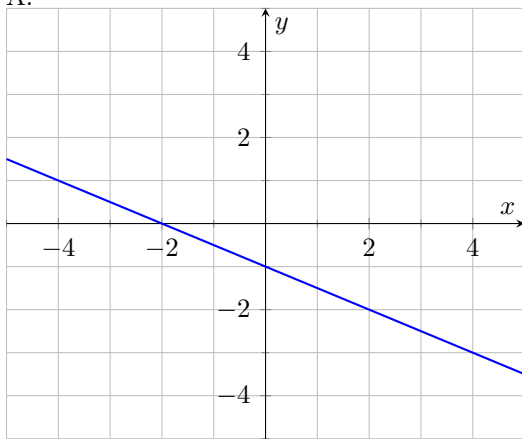
11. Find the x and y intercepts on the graph below.



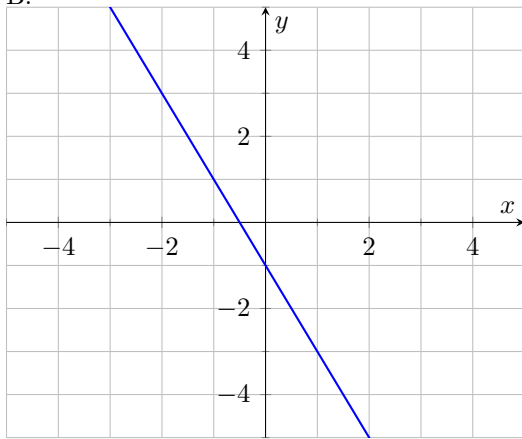
- A. The x -intercept is $(1, 0)$ and the y -intercept is $(0, 2)$.
- B. The x -intercept is $(0, 2)$ and the y -intercept is $(1, 0)$.
- C. The x -intercept is $(2, 0)$ and the y -intercept is $(1, 0)$.
- D. The x -intercept is $(1, 0)$ and the y -intercept is $(2, 0)$.
- E. The x -intercept is $(0, 2)$ and the y -intercept is $(0, 1)$.
- F. The x -intercept is $(2, 0)$ and the y -intercept is $(0, 1)$.
- G. The x -intercept is $(0, 1)$ and the y -intercept is $(0, 2)$.
- H. The x -intercept is $(0, 1)$ and the y -intercept is $(2, 0)$.

12. Plot the y -intercept and one other point to graph the line $f(x) = -x - 1$. Select a third point to double-check your work.

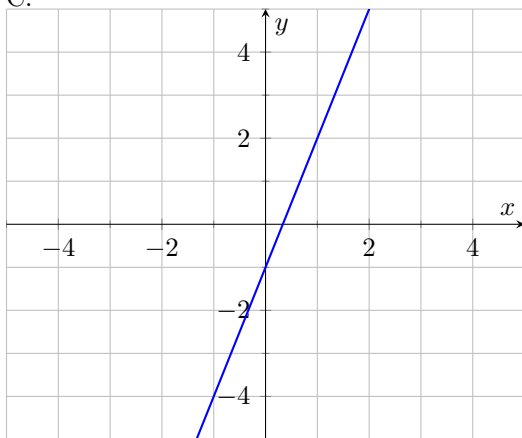
A.



B.

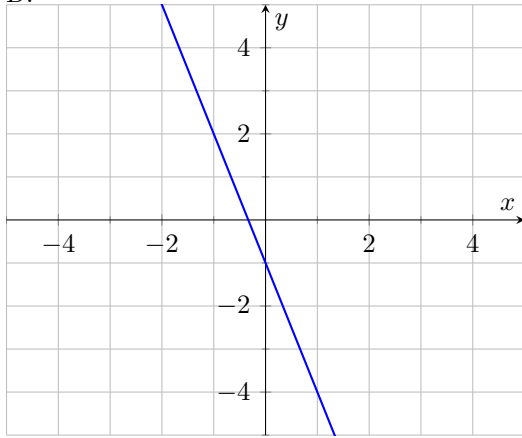


C.

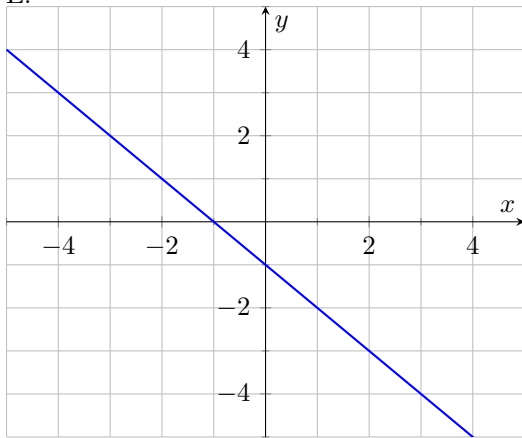


MORE OPTIONS ON NEXT PAGE...

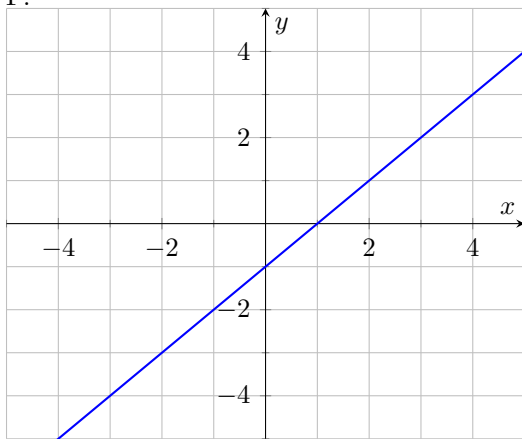
D.



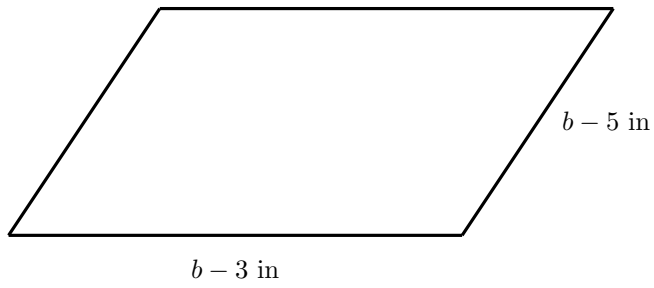
E.



F.



13. The perimeter of the parallelogram shown below is 11 in. Find the value of b and include appropriate units in your answer.



- A. 27 in
- B. $\frac{27}{16}$ in
- C. $\frac{9}{4}$ in
- D. $\frac{135}{4}$ in
- E. $\frac{27}{2}$ in
- F. $\frac{81}{4}$ in
- G. $\frac{27}{4}$ in
- H. $\frac{27}{20}$ in

14. Which of the following is a linear equation in one variable.

A. $y = 4x + 2$

B. $5x + 1 = -3x - 1$

C. $4x^2 + 2 = -3x - 1$

D. $4x + 2$

15. Solve the following linear equation $-5x = 3(2x - 1)$.

A. $-\frac{3}{22}$

B. $-\frac{1}{11}$

C. $\frac{9}{11}$

D. $\frac{3}{11}$

E. $\frac{6}{11}$

F. $-\frac{3}{11}$

G. $\frac{3}{44}$

H. $\frac{1}{11}$

16. Solve the following linear equation $-5x + \frac{2}{5} = \frac{1}{5}x + \frac{3}{4}$.

A. $-\frac{7}{104}$

B. $-\frac{7}{416}$

C. $\frac{7}{26}$

D. $-\frac{21}{104}$

E. $\frac{7}{312}$

F. $\frac{7}{104}$

G. $\frac{7}{416}$

H. $-\frac{7}{52}$

17. Suppose a loan shark gives simple interest loan of \$35 at a weekly rate of 16 percent. After many threats and much intimidation, the loan shark collects a vig (the amount of interest made) of \$11.20, how long did it take to pay back the loan? Round your answer to the nearest week.

- A. It took 3 weeks to pay off the loan.
- B. It took 5 weeks to pay off the loan.
- C. It took 2 weeks to pay off the loan.
- D. It took 7 weeks to pay off the loan.
- E. It took 6 weeks to pay off the loan.
- F. It took 8 weeks to pay off the loan.
- G. It took 4 weeks to pay off the loan.
- H. It took 9 weeks to pay off the loan.

18. Solve $I = PRT$ for the variable T (interest formula)

A. $T = PR - I$

B. $T = \frac{R}{IP}$

C. $T = PI - R$

D. $T = I - P - R$

E. $T = \frac{PI}{R}$

F. $T = I - PR$

G. $T = \frac{P}{IR}$

H. $T = \frac{I}{PR}$

19. A dessert recipe which makes 6 servings calls for $\frac{2}{5}$ cup of flour. What quantity of flour is needed if we want to make 15 servings?

A. We need 1 cup of flour to make 15 servings.

B. We need $\frac{3}{4}$ cup of flour to make 15 servings.

C. We need 3 cup of flour to make 15 servings.

D. We need $\frac{1}{2}$ cup of flour to make 15 servings.

E. We need 5 cup of flour to make 15 servings.

F. We need 4 cup of flour to make 15 servings.

G. We need 2 cup of flour to make 15 servings.

H. We need $\frac{1}{4}$ cup of flour to make 15 servings.

20. Two friends go to a park to exercise. One starts walking at a rate of 3.5 mi/h on the 6-mi path around the park, and the other starts from the same point, jogging at a rate of 6.5 mi/h in the opposite direction on this path. How many minutes will it be before they meet on this path? Round your answer to the nearest minute.

- A. It will take 31 minutes to meet.
- B. It will take 28 minutes to meet.
- C. It will take 37 minutes to meet.
- D. It will take 33 minutes to meet.
- E. It will take 45 minutes to meet.
- F. It will take 36 minutes to meet.
- G. It will take 39 minutes to meet.
- H. It will take 44 minutes to meet.

Answers

1. B.
2. B.
3. H.
4. H.
5. A.
6. A.
7. A.
8. C.
9. C.
10. A.
11. A.
12. E.
13. G.
14. B.
15. D.
16. A.
17. C.
18. H.
19. A.
20. F.