

Answers

1.3 Practice B

1. $t = -8$
2. $u = 2$
3. $w = 1$
4. $a = -3$
5. $k = 5$
6. $x = 4$
7. $x = \frac{1}{2}$
8. $g = -5$
9. no solution

10. infinitely many solutions

11. $k = 2$; one solution

12. infinitely many solutions

13. $10 + 1.5t = 12.5 + t$; 5 toppings

14. 3 ft; $SA = 108\pi \text{ ft}^2$, $V = 108\pi \text{ ft}^3$

15. 2.5 m; $SA = 250\pi \text{ ft}^2$, $V = 250\pi \text{ ft}^3$

16. 14, 15

1.3 Enrichment and Extension

1. $x = \frac{7}{15}$
2. all real numbers
3. no solution
4. $y = -\frac{81}{8}$

5. *Sample answer:* $5x - 7 + 4 = 2x + 3x - 3$

6. *Sample answer:* $t + 5 = t + 7$

7. *Sample answer:* $4x - 3 = 17$

1.3 Puzzle Time

DROP IT A LINE

1.4 Start Thinking

Two numbers that are opposites are the same distance from zero on a number line. Because the distance from 0 to 4 is equal to the distance from 0 to -4 , this proves that the absolute value of 4 and -4 are both equal to 4.

1.4 Warm Up

1. no; There is no way to score a negative number of points in a basketball game.
2. yes; It is possible for bank accounts to contain a negative amount of money.
3. yes; If you used less electricity this month than last month, the answer would be negative.

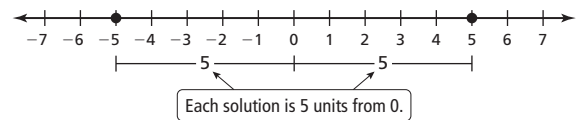
1.4 Cumulative Review Warm Up

1. $>$
2. $<$
3. $<$
4. $<$
5. $>$
6. $=$

1.4 Practice A

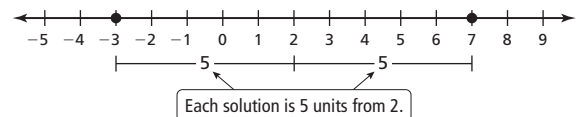
1. -2
2. 0
3. 6
4. 3

5. $r = 5$ and $r = -5$

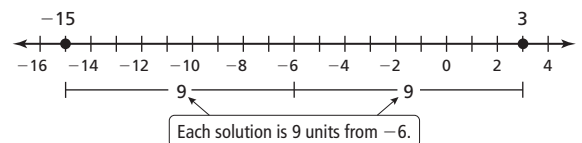


6. no solution

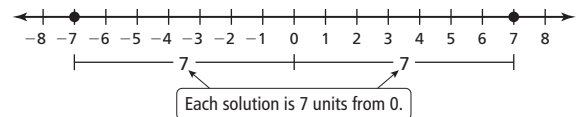
7. $b = 7$ and $b = -3$



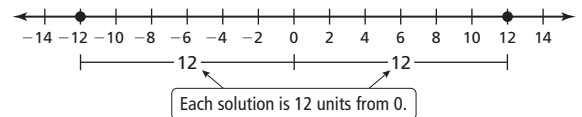
8. $k = 3$ and $k = -15$



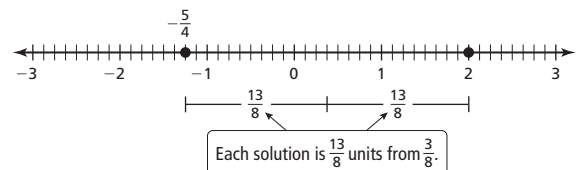
9. $p = 7$ and $p = -7$



10. $q = 12$ and $q = -12$



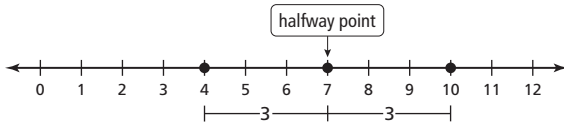
11. $y = 2$ and $y = -\frac{5}{4}$



12. no solution

Answers

13. a.



b. $|x - 7| = 3$

14. $j = -3$ and $j = -1$ 15. $f = -1$ and $t = \frac{1}{2}$

16. $b = 5$ and $b = -\frac{1}{3}$ 17. $h = 4$ and $h = -\frac{2}{3}$

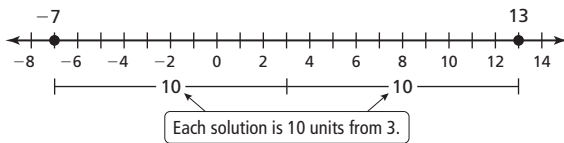
18. $w = 25$ and $w = 1$ 19. $y = 5$

20. no; When 7 is subtracted from each side, the constant becomes negative, so there is no solution, because absolute value cannot be negative.

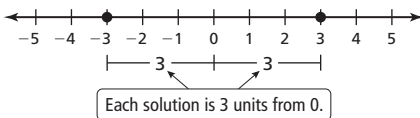
21. The maximum distance of the race is 10 kilometers and the minimum distance is 5 kilometers.

1.4 Practice B

1. $p = 13$ and $p = -7$

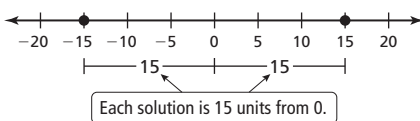


2. $k = 3$ and $k = -3$



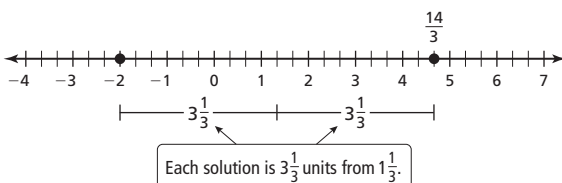
3. no solution

4. $q = 15$ and $q = -15$

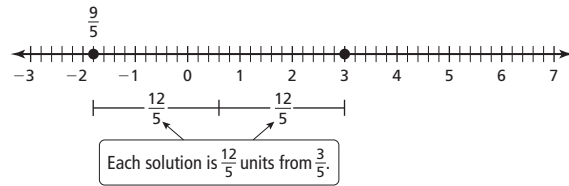


5. no solution

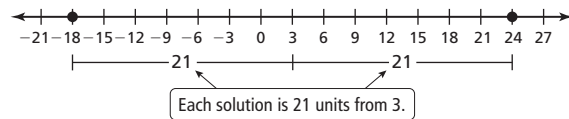
6. $m = -2$ and $m = \frac{14}{3}$



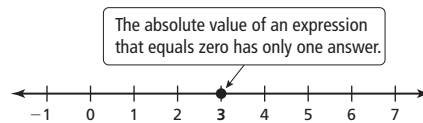
7. $g = 3$ and $g = \frac{9}{5}$



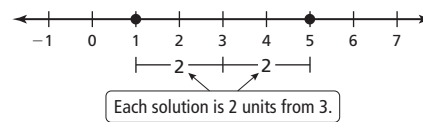
8. $x = 24$ and $x = -18$



9. $d = 3$



10. $c = 5$ and $c = 1$



11. a. $|x - 1| = \frac{1}{32}$; $x = \frac{31}{32}$ and $x = \frac{33}{32}$; The minimum nail length is $\frac{31}{32}$ inch and the maximum nail length is $\frac{33}{32}$ inches.

b. no; $1.05 > \frac{33}{32}$

12. $|x - 6| = 3$

13. $|x - 5| = 10$

14. $|x - 7.5| = 3.5$

15. $w = 2$ and $w = -\frac{6}{11}$

16. $n = 3$ and $n = -\frac{11}{3}$ 17. $t = -1$ and $t = -\frac{3}{7}$

18. no solution 19. $j = -2$ 20. $k = -\frac{7}{4}$

21. a. $|x - 44| = 5$; $x = 49\%$ and $x = 39\%$

b. yes; 50% is not within the range of 39% to 49%.

1.4 Enrichment and Extension

1. $x = \frac{3}{2}$

2. no solution

3. $m = 7$

4. $k = 4$

5. $x = -1$

6. $n = 9$

7. no solution

8. $x = 0$

Answers

1.4 Puzzle Time

IT RESULTED IN THE THRILL OF VICTORY AND THE AGONY OF SEVERAL WEBBED FEET

1.5 Start Thinking

A variable represents a number, so determine what to do using the same logic as if it were a number, and use inverse operations to isolate the variable.

1.5 Warm Up

1. 40 in.² 2. 21 cm 3. 37.68 in.

1.5 Cumulative Review Warm Up

1. $y = 13$ 2. $p = -11$ 3. $h = 3$
 4. $x = -10$ 5. $u = 2$ 6. $y = -2.3$

1.5 Practice A

1. $y = -4x + 7$ 2. $y = 5x + 9$
 3. $y = 5x + 4$ 4. $y = -4x + 9$
 5. $y = 7x - 35$ 6. $y = x - 2$
 7. $x = \frac{y}{3}$ 8. $x = \frac{r}{10}$
 9. $x = \frac{b}{3 + 9y}$ 10. $x = \frac{w}{2h - 11}$
 11. $x = \frac{p + 5}{4 + q}$ 12. $x = \frac{m - 9}{3 - d}$
 13. a. $x = \frac{C - 35}{90}$ b. 3; 7 c. 10
 14. $m = \frac{f}{a}$ 15. $h = \frac{V}{\pi r^2}$
 16. $b = P - a - c$
 17. a. 20 years b. \$1725 c. $p = \frac{A}{1 + rt}$

1.5 Practice B

1. $y = 3x + 8$ 2. $y = -18$
 3. $y = -\frac{3}{4}x + 1$ 4. $y = \frac{13}{7}x + 1$
 5. $y = 10x + 5$ 6. $y = 18 - 18x$
 7. $x = \frac{g}{4 + 5y}$ 8. $x = \frac{w}{4a - 9}$

9. $x = \frac{z - 2}{6 + p}$ 10. $x = \frac{t - 10}{7 - q}$

11. $x = \frac{k}{a - b}$ 12. $x = \frac{p - s}{q + r}$

13. $x = \frac{11 - w}{4 + 3j}$ 14. $x = \frac{y + 8}{1 + 3v}$

15. x cannot be factored out of the d term;
 $k = ax + bx + d$; $k - d = x(a + b)$;

$$x = \frac{k - d}{a + b}$$

16. $r = \frac{I}{pt}$ 17. $w = \frac{V}{\ell h}$

18. $b = 2S - a - c$ 19. $k = \frac{Fd^2}{q_1q_2}$

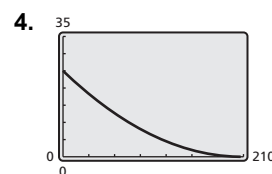
20. 2.5 years

1.5 Enrichment and Extension

1. $t = -\frac{(\sqrt{h} - \sqrt{h_0})\ell w}{2\pi r d^2 \sqrt{3}}$

2. a. 60.56 sec b. 146.19 sec

3. 206.75 sec



5. Water starts draining quickly and slows down as time goes on; There is more water in the tub at the beginning, so it weighs more, and will be forced down the drain at a faster pace. Over time, the pace of the draining water will slow due to the decreasing volume and weight of the water.

Bonus: no, because π is an irrational number

1.5 Puzzle Time

HE GOT LOCKJAW

Cumulative Review

1. -2 2. -17 3. 2 4. 8
 5. 17 6. 12 7. 25 8. 2
 9. -20 10. 30 11. -3 12. -14