

<b>Practice Problems for Placement into Math 098 Beginning Algebra</b>
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1. Simplify:  $-17 + 8 + (-6) - (-19)$

2. Simplify:  $-8^2 + (-8)^2 - \sqrt{8^2}$

3. Simplify:  $-\sqrt{\frac{16}{64}} + \sqrt{\frac{1}{64}}$

4. Simplify:  $-\frac{10}{21} - \frac{17}{21}$

5. Simplify:  $-\frac{5}{12} + \frac{1}{9}$

6. Simplify:  $\frac{3y}{10} + \frac{y}{5} - \frac{6y}{25}$

7. Simplify:  $-\frac{4}{9} \cdot -\frac{3}{7}$

8. Simplify:  $-\frac{16}{5y} \div \frac{4}{15y}$

9. Simplify:  $\frac{7z}{8} \div 6z^2$

10. Evaluate  $-x + 2y$  when  $x = 3$  and  $y = -5$ .

11. Evaluate  $x^2 + 2xy$  when  $x = -3$  and  $y = 5$ .

12. Evaluate  $-x^2 + 2xy - z$  when  $x = 3$  and  $y = -5$  and  $z = -8$ .

13. Use the formula to find the area of a rectangle:  $A = bh$ ;  $b = 7 \text{ cm}$ ,  $h = 9 \text{ cm}$

14. Use the formula to find the area of a triangle:  $A = \frac{1}{2}bh$ ;  $b = 8 \text{ cm}$ ,  $h = 7 \text{ cm}$

15. Use the formula  $F = \frac{9}{5}C + 32$  to convert 10 degrees Celsius to degrees Fahrenheit.

16. Solve:  $\frac{x}{3} = \frac{-12}{9}$

17. Solve:  $\frac{14}{x} = \frac{4}{7}$

18. Solve:  $\frac{-25}{3.5} = \frac{-x}{0.7}$

19. Simplify:  $8 - x + 4x - 2 - 9x$

20. Simplify:  $-7(-2x + 3)$

21. Simplify:  $10x + 6(x + 1) - (7x + 5) - 12$

22. Solve:  $-3x = -24$

23. Solve:  $-x + 11 = -16$

24. Solve:  $5x - 12 = -17$

25. Solve:  $4x - 13 = 7x - 28$

26. Solve:  $\frac{2}{5}x = -8$

27. Solve:  $\frac{x}{3} + 2 = \frac{x}{2} + 8$

28. Graph the equation:  $y = 4x - 7$

29. Graph the equation:  $x + 8 = 12$

30. Graph the equation:  $-2x + 3y = 12$

31. What number is 4% of 160?

32. What is the sales tax on a leather coat priced at \$920 if the sales tax is 5%?

33. The purchase price of a personal computer is \$1500. If the sales tax rate is 8%, what is the total price?

34. Convert 60 in to feet.

35. Convert 18 yd to feet.

36. Convert 5 meters to feet. (Use  $1 \text{ m} = 3.28 \text{ ft.}$ )

37. A triangle has the sides of length 8 inches, 10 inches, and 12 inches. Find the perimeter.

38. How much fencing is needed to enclose a rectangular garden 70 feet by 21 feet?

39. A stop sign has eight equal sides of length 12 inches. Find its perimeter.

40. Use the Pythagorean Theorem  $a^2 + b^2 = c^2$  to find the length of the hypotenuse when  $a = 3 \text{ cm}$  and  $b = 4 \text{ cm}$ .

41. Use the Pythagorean Theorem  $a^2 + b^2 = c^2$  to find the length of the leg when  $a = 9$  cm and  $c = 15$  cm.

42. Use the Pythagorean Theorem  $a^2 + b^2 = c^2$  to find the length of the diagonal for a rectangle if the width is 6 cm and the length is 8 cm.

43. Three times a number, added to 9, is 3. Find the number.

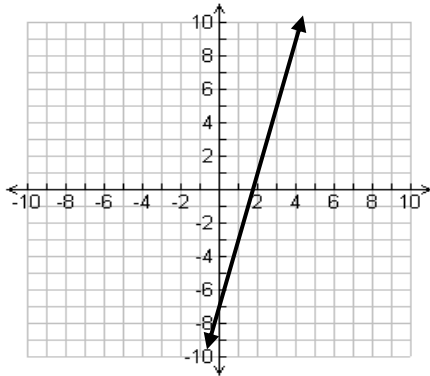
44. A biker sold his used mountain bike and accessories for \$270. If he received 5 times as much money for the bike as he did for the accessories, find how much money he received for the bike.

45. In an election, there were 10,000 votes cast. The Republican candidate received 100 more votes than the Independent candidate and the Democratic candidate received 150 less than the Independent candidate. How many votes did the Independent candidate receive?

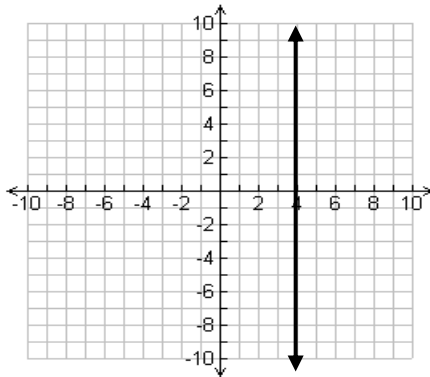
## Answer Key

1. 4
2.  $-8$
3.  $-\frac{3}{8}$
4.  $-\frac{9}{7}$
5.  $-\frac{11}{36}$
6.  $\frac{13y}{50}$
7.  $\frac{4}{21}$
8.  $-12$
9.  $\frac{7}{48z}$
10.  $-13$
11.  $-21$
12.  $-31$
13.  $63 \text{ cm}^2$
14.  $28 \text{ cm}^2$
15.  $50^\circ \text{ F}$
16.  $x = -4$
17.  $x = \frac{49}{2}$
18.  $x = 5$
19.  $-6x + 6$
20.  $14x - 21$
21.  $9x - 11$
22.  $x = 8$
23.  $x = 27$
24.  $x = -1$
25.  $x = 5$
26.  $x = -20$
27.  $x = -36$

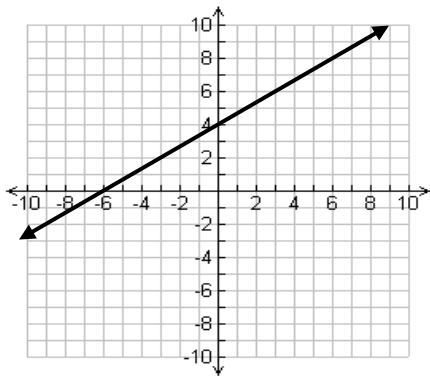
28.



29.



30.



31. 6.4
32. \$46
33. \$1620
34. 5 feet
35. 54 feet

36. 16.4 feet
37. 30 inches
38. 182 feet
39. 96 inches
40. 5 cm
41. 12 cm
42. 10 cm
43.  $-2$
44. \$225
45. 3,350 votes