

## Algebra Review Exercises

**NOTE:** At a minimum, students should be comfortable with this level of algebra

### Evaluate.

1.  $3a$ , for  $a = 5$

2.  $\frac{x}{y}$ , for  $x = 12$  and  $y = 2$

3.  $\frac{2p}{q}$ , for  $p = 20$  and  $q = 8$

4.  $\frac{x-y}{3}$ , for  $x = 16$  and  $y = -5$

5.  $10 - y^2$ , for  $y = 5$

6.  $-10 + a^2 \div (b+1)$ , for  $a = 5$  and  $b = 4$

### Multiply.

7.  $6(3x + 5y)$

8.  $8(5x + 3y - 2)$

### Simplify.

9.  $\frac{20}{48}$

10.  $\frac{18}{8}$

Perform the indicated operation and, if possible, simplify.

11.  $\frac{4}{9} + \frac{5}{12}$

12.  $\frac{9}{16} \div 3$

13.  $\frac{2}{3} - \frac{1}{15}$

14.  $\frac{9}{10} \cdot \frac{16}{5}$

15. Classify as true or false:  $-8 \geq 8$

16. Classify as true or false:  $0 \leq -1$ .

17. Find the decimal notation:  $-\frac{7}{8}$

18. Find the absolute value of:  $|-1|$

19. Find  $-(-x)$  when  $x$  is  $-5$ .

### Simplify.

20.  $4 + (-7)$

21.  $-\frac{2}{3} + \frac{1}{12}$

22.  $6 + (-9) + (-8) + 7$

23.  $-3.8 + 5.1 + (-12) + (-4.3) + 10$

24.  $-3 - (-7)$

$$25. -\frac{9}{10} - \frac{1}{2}$$

$$26. -3.8 - 4.1$$

$$27. -9 \cdot (-6)$$

$$28. -2.7(3.4)$$

$$29. \frac{2}{3} \left( -\frac{3}{7} \right)$$

$$30. 3 \cdot (-7) \cdot (-2) \cdot (-5)$$

$$31. 35 \div (-5)$$

$$32. -5.1 \div 1.7$$

$$33. -\frac{3}{5} \div \left( -\frac{4}{5} \right)$$

$$34. |-3 \cdot 4 - 12 \cdot 2| - 8(-7)$$

$$35. |-12(-3) - 2^3 - (-9)(-10)|$$

$$36. 120 - 6^2 \div 4 \cdot 8$$

$$37. (120 - 6^2) \div 4 \cdot 8$$

$$38. (120 - 6^2) \div (4 \cdot 8)$$

$$39. \frac{4(18-8) + 7 \cdot 9}{9^2 - 8^2}$$

**Combine like terms.**

$$40. 11a + 2b + (-4a) + (-5b)$$

$$41. 7x - 3y - 9x + 8y$$

42. Find the opposite of -7

43. Find the reciprocal of -7.

$$44. \text{Simplify: } (-3y)^3$$

**Remove parentheses and simplify.**

$$45. 2a - (5a - 9)$$

$$46. 3(b + 7) - 5b$$

$$47. 3[11x - 3(4x - 1)]$$

$$48. 2[6(y - 4) + 7]$$

$$49. [8(x + 4) - 10] - [3(x - 2) + 4]$$

$$50. 5\{[6(x - 1) + 7] - [3(3x - 4) + 8]\}$$