

DeVry University

Algebra Practice Exercises

Please do not use a calculator. We are evaluating your Algebra skills, so show your work.

1. Choose the expression that is equivalent to $20x + 5y$.

a. $5(15x + y)$

c. $5(4x + 5y)$

b. $5(4x + y)$

d. $25xy$

Problems 2 – 5: Simplify.

2. $\frac{8}{9x-9} + \frac{9}{9-9x}$

3. $\frac{6}{r} + \frac{7}{r-3}$

4. $3(x + 1) + 2(5 - x)$

5. $(3xy^2)^3$

6. Multiply $(x + 5)$ by $(x - 4)$; simplify.

7. Factor: $3x^2 + 11x - 4$

8. Factor: $x^2 + 2xy + y^2$

9. $|4| - |-3| =$

Problems 10 – 26: Solve for x .

10. $x + 8 = 11$

11. $14 = 6 - 2x$

12. $9x - 3 = 15$

13. $8x - 4 + 2x = 10 + 3x$

14. $5x + 7 = 2x + 14$

15. $8 - (2x - 3) = 17$

16. $4x - 3(x + 5) = 5 - 2x$

$$17. 8xy = 23$$

$$18. A = bxc$$

$$19. \frac{x}{12} = 2$$

$$20. \frac{2}{x} = 12$$

$$21. 5x - \frac{1}{2} = \frac{5}{8}$$

$$22. -\frac{3}{2}x - \frac{1}{3} = -\frac{2}{5}x + \frac{1}{6}$$

$$23. x - \frac{5}{8} = \frac{1}{4}$$

$$24. \frac{2}{x} - 3 = \frac{1}{x} + 2$$

25. $\frac{3}{4x} - \frac{1}{2} = \frac{2}{3} + \frac{4}{x}$

26. If a number is multiplied by 3 and then 4 is subtracted, the result is 11. What is the number?

27. Solve for x if $x^2 + 5x + 6 = 0$.

28. Solve for x and y :

$$\begin{aligned} 2x + y &= 8 \\ x + y &= 6 \end{aligned}$$

29. Two investments produce an annual interest income of \$114, and the two interest rates paid are 2.5% and 3.5%. How much is invested at each rate? (The principle value is \$4,000.)

30. A convention manager finds that she has \$1,290 made up of twenties and fifties. She has a total of 42 bills. How many of each kind does she have?