

Fractions

Perform the given operations. Leave answers as a simplified fraction when necessary.

1. $\frac{1}{5} \div (5 + \frac{3}{2})$

2. $1 + \frac{3}{2} \div \frac{6}{5}$

3. $(2 + \frac{7}{6}) \cdot \frac{3}{2}$

4. $\frac{3}{4}(4 + \frac{1}{2})$

5. $\frac{5}{3} \cdot \frac{5}{3} \cdot 2$

Linear Equations

Solve each linear equation for the stated variable.

6. Solve for x.

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

7. Solve for m.

$$g = 4cm - 3cm$$

8. Solve for x.

$$-1(1 + 7x) - 6(-7 - x) = 36$$

Linear Systems

Solve the following linear systems.

9.

$$\begin{aligned} 3x + 4y &= 12 \\ 2x - 3y &= -9 \end{aligned}$$

10.

$$\begin{aligned} 2x + 9y - 5 &= 0 \\ 5y - x &= 26 \end{aligned}$$

11.

$$\begin{aligned} y &= \frac{2}{3}x + \frac{7}{3} \\ 6y - 4x &= 14 \end{aligned}$$

Quadratics

Solve by factoring.

12. $x^2 - 8x = -18$

13. $x^2 + 3x = 10$

14. $5x^2 - 32x - 21 = 0$

15. $x^2 - 11x + 19 = -5$

$$16. 27x^2 + 18x = 0$$

$$17. 2x^2 + 20x + 12 = 5x - x^2$$

$$18. x^2 - 16 = 0$$

$$19. 4x^2 - 25 = 0$$

Rational Expressions

Factor and/or reduce the following rational expressions.

$$20. \frac{x^2+x-6}{x^2-4}$$

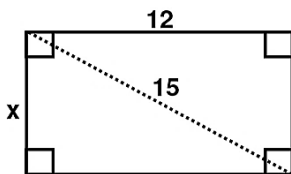
$$21. \frac{x^2+x-12}{5x-15}$$

$$22. \frac{3x^2+7x-6}{9x^2-4} \cdot \frac{15x^2+4x-4}{9-x^2}$$

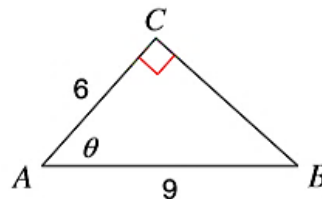
$$23. \frac{x^2-1}{5x} \div \frac{x+1}{5x^2+10}$$

Right Triangle Trigonometry

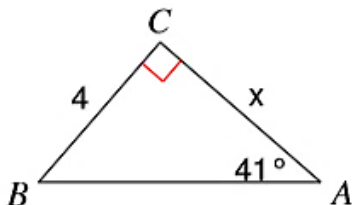
24. Solve for x .



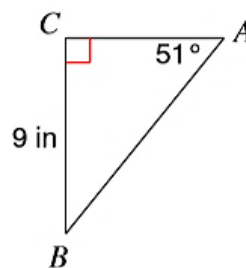
25. Solve for θ



26. Solve for x .



27. Solve the triangle.



Quadratics Continued

Solve by completing the square.

| | |
|--------------------------|---------------------|
| 12. $x^2 + 10x - 25 = 0$ | 13. $x^2 + 15 = 8x$ |
|--------------------------|---------------------|

Solve the equation using the quadratic formula.

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| 14. $2x^2 - 14x + 40 = 3x^2 - 16x + 32$ | 15. $x^2 - 4 = 3x$ |
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