

1. Solve:

- $5(y - 2) - 2y = 65$
- $2y + 4(1 - y) \leq 3(2 - y)$
- $3(x - 5) = 2(x + 1) + x$
- $-2y \leq 22 + 6y$
- $6 \leq x + 4 \leq 11$
- $|x - 6| = 3$

2. Multiply:

- $(5y - 2)(3y - 1)$
- $(3x - 1)(x^3 - 3x^2 + 2)$
- $(2x + 3)^2$

3. Simplify completely:

- $\sqrt{2}(\sqrt{10} + \sqrt{6})$
- $\frac{6}{\sqrt{3}}$
- $\sqrt{45x^{11}y^6}$
- $\sqrt{108} + \sqrt{12}$

4. Use the distribute property:

- $3ac(3 + 3a + c)$
- $4xyz + 4xy^2$
- $25x^3y^4z^3 + 15x^4y^2z^3$
- $(x + 6)(x + 9)$

5. Solve for x:

- $\frac{x-3}{x+1} - \frac{2}{x} = \frac{4}{x^2+x}$
- $\sqrt{5x} - 2 = 1$
- $\frac{x-5}{6} = \frac{3}{x-8}$

6. Simplify:

- $-\frac{2}{3}(6x - 9) + \frac{1}{2}(8x - 4)$
- $2(3x + 6) - 3(x + 12)$
- $7m + 5(3 - m) - 19$
- $(-4m^2n^3p)^2$
- $(-3xy^2)(4xy)$
- $\frac{32a^3b^2c}{8abc^0}$
- $\frac{x^2y^{-3}}{x^{-5}y}$
- $\frac{7-x}{x^2-7x} \times \frac{16x^2-4x}{4x^2+3x-1}$
- $\frac{5f-2}{3} - \frac{3f+1}{5} + \frac{2f-5}{15}$
- $\frac{\frac{x}{6}}{\frac{x-1}{3} \cdot 2}$

7. Solve by factoring:

- $x^2 - 14x + 48 = 0$
- $x^2 + x = 12$
- $2x^2 - 5x - 3 = 0$
- $25x^2 - 36 = 0$

8. Solve using the quadratic formula:

- $3x + 4 = 2x^2$
- $x^2 - 8x + 3 = 0$

9. Find the equation of the line given the following information:

- a. Through  $(5, -6)$  and  $(2, 3)$ . Use point-slope form only.
- b. Through  $(5, -3)$  and perpendicular to  $y = \frac{1}{4}x - 5$ . Use point-slope form only.
- c. Having the same y-intercept as  $2x - y = 4$  and parallel to  $x + y = 6$
- d. Through  $(6, -7)$  and  $(1, -7)$
- e. Vertical and through  $(-5, -8)$

10. Solve this system by substitution:

$$\begin{aligned}x - 2y &= 5 \\4x + 3y &= 9\end{aligned}$$

11. Solve this system by the addition method:

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