

Solve the equation.

1. $5x - 4 = 2(x - 2)$

$5x - 4 = 2x - 4$

$3x = 0$

$x = 0$

4. $\left(\frac{3}{y} + \frac{6}{y} - \frac{1}{y} = 11\right) y$

$3 + 6 - 1 = 11y$

$8 = 11y$

$\frac{8}{11} = y$

7. $\left(\frac{6}{2x+11} + 5 = 5\right) 2x+11$

$6 + 5(2x+11) = 5(2x+11)$

$6 \neq 0$

\emptyset

10. $\left(\frac{2}{2x+5} + \frac{3}{2x-5} = \frac{10x+5}{4x^2-25}\right) 2x-5$

$2(2x-5) + 3(2x+5) = 10x+5$

$4x - 10 + 6x + 15 = 10x + 5$

$10x + 5 = 10x + 5$

All R's except $\pm \frac{5}{2}$

2. $\frac{5}{3}x - 1 = 4 + \frac{2}{3}x$

$x = 5$

5. $(2x+9)(4x-3) = 8x^2 - 12$

$8x^2 + 30x - 27 = 8x^2 - 12$

$30x = 15$

$x = \frac{1}{2}$

8. $\left(\frac{4}{2u-3} + \frac{10}{4u^2-9} = \frac{1}{2u+3}\right) 2u-3 \cdot 2u+3$

$4(2u+3) + 10 = 2u-3$

$8u + 12 + 10 = 2u - 3$

$6u = -25$

$u = \frac{-25}{6}$

11. $\left(\frac{-3}{x+4} + \frac{7}{x-4} = \frac{-5x+4}{x^2-16}\right) x+4 \cdot x-4$

$-3(x-4) + 7(x+4) = -5x+4$

$-3x + 12 + 7x + 28 = -5x + 4$

$4x + 40 = -5x + 4$

$\frac{9x}{9} = \frac{-36}{9}$

$x = -4; x \neq -4$

\emptyset

3. $\left(\frac{2x-9}{4} = 2 + \frac{x}{12}\right) 12$

$3(2x-9) = 24 + x$

$6x - 27 = 24 + x$

$5x = 51$

$x = \frac{51}{5}$

6. $\left(\frac{-5}{3x-9} + \frac{4}{x-3} = \frac{5}{6}\right) 6(x-3)$

$-5(2) + 4(6) = 5(x-3)$

$-10 + 24 = 5x - 15$

$14 = 5x - 15$

$29 = 5x$

$\frac{29}{5} = x$

9. $\left(\frac{2x}{2x+3} + \frac{6}{4x+6} = 5\right) 2(2x+3)$

$2x(2) + 6 = 5(2)(2x+3)$

$4x + 6 = 20x + 30$

$\frac{-24}{16} = \frac{16x}{16}$

$\frac{-3}{2} = x; x \neq \frac{-3}{2}$

\emptyset

12. $\left(\frac{2}{2x+3} + \frac{4}{2x-3} = \frac{5x+6}{4x^2-9}\right) 2x+3 \cdot 2x-3$

$2(2x-3) + 4(2x+3) = 5x+6$

$4x - 6 + 8x + 12 = 5x + 6$

$12x + 6 = 5x + 6$

$7x = 0$

$x = 0$

Show that the equation is an identity.

13. $\frac{x^3+8}{x+2} = x^2 - 2x + 4$

$$\frac{(x+2)(x^2-2x+4)}{(x+2)} =$$

$$x^2-2x+4 = x^2-2x+4$$

14. $\frac{49x^2-25}{7x-5} = 7x + 5$

$$\frac{(7x-5)(7x+5)}{(7x-5)} =$$

$$7x+5 = 7x+5$$

For what value of c is the number a a solution of the equation?

15. $3x - 2 + 6c = 2c - 5x + 1; \quad a = 4$

$$3(4) - 2 + 6c = 2c - 5(4) + 1$$

$$12 - 2 + 6c = 2c - 20 + 1$$

$$10 + 6c = 2c - 19$$

$$4c = -29$$

$$c = \frac{-29}{4}$$

The formula occurs in the indicated application. Solve for the specified variable.

16. $C = 2\pi r$ for r .

$$\frac{C}{2\pi} = \frac{2\pi r}{2\pi}$$

$$\frac{C}{2\pi} = r$$

17. $R = \frac{V}{I}$ for I .

$$R = \frac{V}{I}$$

$$RI = V$$

$$I = \frac{V}{R}$$

18. $A = P + Prt$ for r .

$$A = P + Prt$$

$$\frac{A-P}{Pt} = \frac{Prt}{Pt}$$

$$\frac{A-P}{Pt} = r$$

Choose the equation that best describes the table of data. (Hint: Make assignments to Y_1 - Y_4 and examine a table of their values.)

19.

x	y
1	0.8
2	-0.4
3	-1.6
4	-2.8
5	-4.0

- (1) $y = -1.2x + 2$
- (2) $y = -1.2x^2 + 2$
- (3) $y = 0.8\sqrt{x}$
- (4) $y = x^{3/4} - 0.2$