

Solving Rational Equations

Solve the following equations using the LCD to clear fractions first. Note: You must check all answers.

$$1. \frac{1}{3} + \frac{4}{5} = \frac{x}{9}$$

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

$$3. \frac{2}{3} - \frac{1}{5} = \frac{7}{3x}$$

$$4. \frac{2}{6} + \frac{1}{2x} = \frac{1}{3}$$

$$5. y + \frac{4}{y} = -5$$

$$6. \frac{y-1}{y-3} = \frac{2}{y-3}$$

$$7. \frac{3}{x+2} = \frac{5}{x+4}$$

$$8. \frac{x^2-1}{x+2} = \frac{3}{x+2}$$

$$9. \frac{x^2+4}{x-1} = \frac{5}{x-1}$$

$$10. \frac{4}{a-7} = \frac{-2a}{a+3}$$

$$11. \frac{6}{a+1} = \frac{a}{a-1}$$

$$12. \frac{50}{t-2} - \frac{16}{t} = \frac{30}{t}$$

$$13. \frac{60}{w-5} - \frac{18}{w} = \frac{40}{w}$$

$$14. \frac{3}{x} + \frac{x}{x+2} = \frac{4}{x^2+2x}$$

$$15. \frac{x}{x+1} + \frac{5}{x} = \frac{1}{x^2+x}$$

$$16. \frac{5}{x+2} - \frac{3}{x-2} = \frac{2x}{4-x^2}$$

$$17. \frac{y+3}{y+2} - \frac{y}{y^2-4} = \frac{y}{y-2}$$

$$18. \frac{2}{a+4} + \frac{2a-1}{a^2+2a-8} = \frac{1}{a-2}$$

$$19. \frac{3}{x^2-6x+9} + \frac{x-2}{3x-9} = \frac{x}{2x-6}$$

$$20. \frac{3}{x^2-x-12} + \frac{2}{x^2+x-6} = \frac{4}{x^2-6x+8}$$

$$21. \frac{2}{x+3} - \frac{3x+5}{x^2+4x+3} = \frac{5}{x+1}$$

$$22. \frac{6}{x^2-2x-3} - \frac{1}{x^2-1} = \frac{2}{x^2-4x+3}$$

Answer Key

1. $\frac{51}{5}$

2. -2

3. 5

4. No Solution

5. $-4, -1$

6. No Solution

7. 1

8. 2

9. -1

10. $2, 3$

11. $2, 3$

12. -23

13. -145

14. -1

15. -4

16. 4

17. -3

18. 3

19. $-6, 5$

20. 26

21. No Solution

22. $\frac{5}{3}$