

07/05

Solving Rational Equations

Solve.

$$1. \quad \frac{3}{4n} + \frac{1}{n} = \frac{7}{8} \quad n = 2$$

$$2. \quad \frac{2}{3n} + \frac{4}{n} = \frac{7}{9} \quad n = 6$$

$$3. \quad \frac{6-x}{4-x} = \frac{3}{5} \quad x = 9$$

$$4. \quad \frac{2x-5}{8x-5} = \frac{1}{4} \quad \text{no soln.}$$

$$5. \quad \frac{x-4}{x-2} = 2 \quad x = 0$$

$$6. \quad \frac{2x-4}{x-2} = 3 \quad \text{no soln.}$$

$$7. \quad \frac{3}{2n+1} - \frac{6}{4n+2} = 0 \quad \text{(true statement) all real #'s}$$

$$8. \quad \frac{3}{2x-1} = \frac{7}{4x-2} \quad \text{no soln.}$$

$$9. \quad \frac{3x+5}{6} - \frac{10}{x} = \frac{x}{2} \quad x = 12$$

$$10. \quad \frac{5}{1+y} - \frac{3}{1-y} = 2 \quad \begin{matrix} y = 0 \\ y = 4 \end{matrix}$$

$$11. \quad \frac{1}{y-3} = \frac{6}{y^2-9} \quad \text{no solution}$$

$$12. \quad \frac{n-2}{n} - \frac{n-3}{n-6} = \frac{1}{n} \quad n = 3$$

$$13. \quad \frac{1}{2x-1} - \frac{3}{4x^2-1} = 0 \quad x = 1$$

$$14. \quad \frac{1}{y^2-y} + \frac{1}{1-y} = \frac{1}{2} \quad y = -2$$

$$15. \quad \frac{1}{x-4} + \frac{2}{x^2-16} = \frac{3}{x+4} \quad x = 9$$

$$16. \quad \frac{3a}{a-1} - \frac{4}{a+1} = \frac{4}{a^2-1} \quad \begin{matrix} a = 0 \\ a = 1/3 \end{matrix}$$

$$17. \quad \frac{x-2}{x^2-x-6} = \frac{1}{x^2-4} + \frac{3}{2x+4} \quad x = 1, x = 4$$

$$18. \quad \frac{x}{x+1} - \frac{x+1}{x-4} = \frac{5}{x^2-3x-4} \quad \text{no soln.}$$