

Secondary Math III
Solving Rational Equations
Assignment 5.5

Name _____

Period _____

List any restrictions for x , then solve the equation. Identify any extraneous solutions.

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

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

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

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

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

6. $\frac{-6x+36}{x^2-8x+12} = \frac{x+2}{x-2}$

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

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

9. $\frac{5}{x-2} = \frac{15}{x^2-4}$

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

11.
$$\frac{2}{x^2-x} - \frac{1}{x-1} = 0$$

12.
$$1 + \frac{4}{x-4} = \frac{-3}{x^2-16}$$

13.
$$\frac{9}{x-3} = \frac{27}{x^2-3x} + \frac{6}{x}$$

14.
$$\frac{5x}{x-2} - 7 = \frac{10}{x-2}$$

Multiply, divide, add or subtract as indicated. Simplify if possible; state any restrictions on the variable.

15.
$$\frac{3x^2-15x}{x^2-10x+25} \cdot \frac{2x^2-10x}{3x}$$

16.
$$\frac{x^2+4x+3}{x^2-1} \div \frac{x^2-16}{x^2+x-12}$$

17.
$$\frac{3}{2x} + \frac{x-2}{x^2}$$

18.
$$2 - \frac{x^2}{x^2-1}$$

19.
$$\frac{\frac{1}{x} + \frac{3}{x^2}}{\frac{x+3}{7}}$$