

SM3-A HW #12-9 (Rational Equations and Expressions)

Solve each equation. Remember to check for extraneous solutions.

1) $\frac{5}{2r} + \frac{5r+1}{6r} = \frac{1}{6}$

2) $\frac{1}{n} = \frac{3n-15}{n^2} - \frac{1}{n^2}$

3) $\frac{n-2}{4n} - \frac{1}{4} = \frac{n-6}{4n}$

4) $\frac{r+5}{r^2} = \frac{1}{r} + \frac{2}{r}$

5) $\frac{m+5}{m^2} + \frac{1}{m^2} = \frac{m-1}{2m^2}$

6) $\frac{1}{2x} + \frac{1}{x^2} = \frac{1}{2x^2}$

7) $\frac{1}{3x} + \frac{1}{x^2} = \frac{5}{x^2}$

8) $\frac{1}{4m^2} = \frac{1}{2m} - \frac{6}{m^2}$

9) $\frac{v+4}{5v} - 4v = \frac{3}{5v}$

10) $\frac{1}{b} = 1 - \frac{1}{b^2 - b}$

Simplify each expression.

11) $\frac{6p-4}{p+1} + \frac{5p}{3p^2}$

12) $\frac{x+6}{2x+2} + \frac{2}{6}$

13) $\frac{2}{a-6} - \frac{5}{a+4}$

14) $\frac{2n}{n-2} - \frac{6}{n-6}$

Simplify each and state the excluded values.

$$15) \frac{42m - 42}{54m^2}$$

$$16) \frac{n - 8}{n^2 - 7n - 8}$$

$$17) \frac{12n}{14n + 2}$$

$$18) \frac{50b^2 - 40b}{60b}$$

Simplify each expression.

$$19) \frac{30x^2 + 54x}{50x + 90} \div \frac{6x}{9}$$

$$20) \frac{1}{n - 5} \div \frac{5n^2}{5n^3 - 40n^2}$$