

Math Sheet

Name _____ Score _____ / 10 Teacher _____ Date _____

Solving Rational Equations

Solve each equation. Keep the original denominators nonzero and reject excluded solutions.

1. $\frac{1}{24s^2} = \frac{1}{12s^2} + \frac{1}{s}$

2. $\frac{s+1}{20s^2} + \frac{5}{10s^2} = \frac{s-3}{10s^2}$

3. $\frac{1}{q^2} = \frac{1}{121}$

4. $\frac{1}{c} + \frac{6c+4}{c^2-3c} = \frac{11c+2}{c^2-3c}$

5. $\frac{1}{x} + \frac{12x-2}{x^2-5x} = \frac{10x+3}{x^2-5x}$

6. $\frac{1}{c} = \frac{8}{c} + 10$

7. $\frac{1}{c^2} = \frac{1}{64}$

8. $\frac{p-4}{16p^2} + \frac{10}{8p^2} = \frac{p+10}{8p^2}$

9. $\frac{y-4}{2y^2} + \frac{8}{y^2} = \frac{y-4}{y^2}$

10. $\frac{1}{s} = \frac{7}{12s} - 9$

Solving Rational Equations

Answer Key

Solve each equation. Keep the original denominators nonzero and reject excluded solutions.

1. $\frac{1}{24s^2} = \frac{1}{12s^2} + \frac{1}{s}$
 $s \in \{-\frac{1}{24}\}$

Restrictions: $24s^2 \neq 0$ $12s^2 \neq 0$ $s \neq 0$

2. $\frac{s+1}{20s^2} + \frac{5}{10s^2} = \frac{s-3}{10s^2}$
 $s \in \{17\}$

Restrictions: $20s^2 \neq 0$ $10s^2 \neq 0$

3. $\frac{1}{q^2} = \frac{1}{121}$
 $q \in \{-11, 11\}$

Restrictions: $q^2 \neq 0$

4. $\frac{1}{c} + \frac{6c+4}{c^2-3c} = \frac{11c+2}{c^2-3c}$
 $c \in \{-\frac{1}{4}\}$

Restrictions: $c \neq 0$ $c^2 - 3c \neq 0$

5. $\frac{1}{x} + \frac{12x-2}{x^2-5x} = \frac{10x+3}{x^2-5x}$
 $x \in \{\frac{10}{3}\}$

Restrictions: $x \neq 0$ $x^2 - 5x \neq 0$

6. $\frac{1}{c} = \frac{8}{c} + 10$
 $c \in \{-\frac{7}{10}\}$

Restrictions: $c \neq 0$

7. $\frac{1}{c^2} = \frac{1}{64}$
 $c \in \{-8, 8\}$

Restrictions: $c^2 \neq 0$

8. $\frac{p-4}{16p^2} + \frac{10}{8p^2} = \frac{p+10}{8p^2}$
 $p \in \{-4\}$

Restrictions: $16p^2 \neq 0$ $8p^2 \neq 0$

9. $\frac{y-4}{2y^2} + \frac{8}{y^2} = \frac{y-4}{y^2}$
 $y \in \{20\}$

Restrictions: $2y^2 \neq 0$ $y^2 \neq 0$

10. $\frac{1}{s} = \frac{7}{12s} - 9$
 $s \in \{-\frac{5}{108}\}$

Restrictions: $s \neq 0$ $12s \neq 0$