Name _____ Period _____ Score _____

Precalculus Worksheet 3
Solving Rational Equations and Inequalities

Solve each equation.

1. $\frac{2}{5}+\frac{7}{8}=\frac{y}{20}$

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

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

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

5. $\frac{1}{2x}-\frac{2}{5x}=\frac{1}{10x}$

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

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

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

9. A biologist introduces 100 insects into a culture. The population P of the culture can be approximated by the following model where t is the time in hours.

$$P=\frac{500(1+3t)}{5+t}$$

Find the time required for the population to increase to 1000 insects.