Name_____

Chapter 9 Study Guide

Date_____ Period____

Simplify each expression.

1) $\frac{6x}{x-1} + \frac{2x}{5x+6}$

2) $\frac{2}{4p} + \frac{p-3}{2p+2}$

3) $\frac{b-5}{b-7} - \frac{8}{6b}$

4) $\frac{5}{3} + \frac{4n}{3n+21}$

5) $\frac{1}{8r} \div \frac{2r+10}{2r^2-2r-60}$

6) $\frac{27x^3+90x^2}{6x^2+17x-10} \div \frac{1}{2x-1}$

7) $\frac{80n^2}{7n-9} \div \frac{n-10}{7n-9}$

8) $\frac{m+2}{\frac{4}{m+2}+\frac{3}{2}}$

9) $\frac{\frac{x}{4}-\frac{5}{x}}{4}$

10) $\frac{\frac{x+1}{x}-\frac{3x-4}{x^2+x}}{3x-4}$

Solve each equation. Remember to check for extraneous solutions.

11) $\frac{1}{2a} + \frac{a-1}{a^2} = \frac{a-1}{a}$

12) $5 + \frac{1}{n^2} = \frac{n-4}{n}$

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

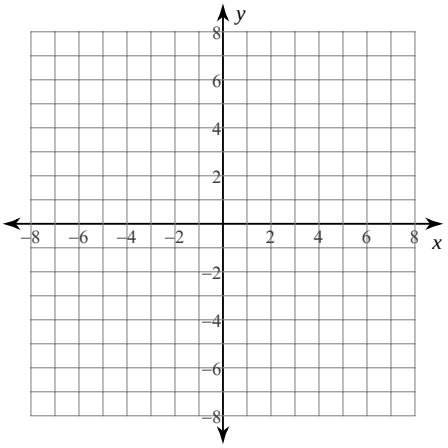
14) $\frac{1}{x} = \frac{7}{x^2-7x} + \frac{2}{x-7}$

15) $\frac{6k+48}{k^2+4k} = \frac{1}{k} - \frac{k+8}{k^2+4k}$

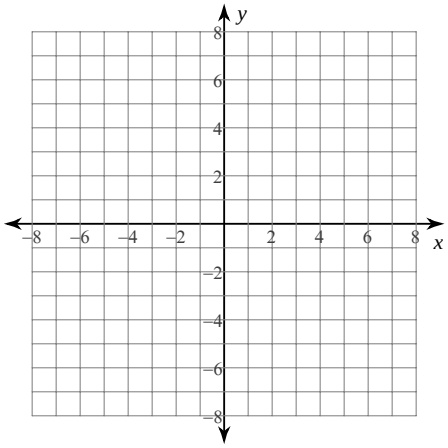
16) $\frac{5}{n^2-6n} + \frac{1}{n-6} = \frac{1}{n^2-6n}$

Graph each function.

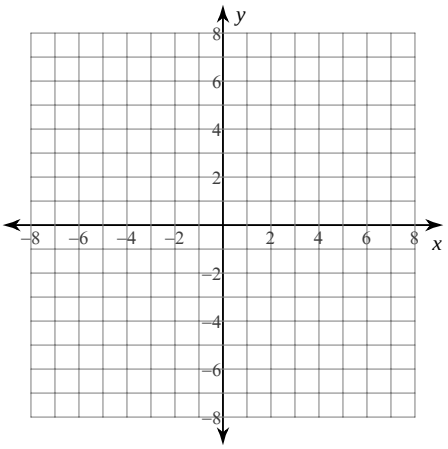
17) $f(x) = \dfrac{2}{x+1}$



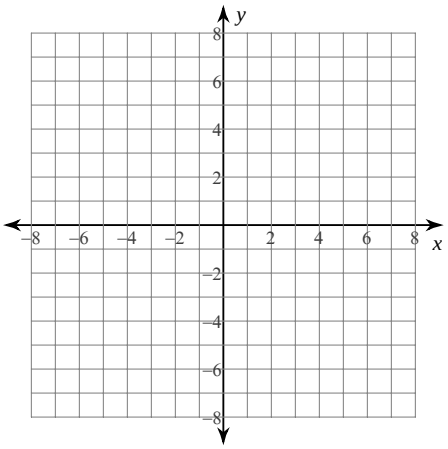
18) $f(x) = \dfrac{3x}{x-2}$



19) $f(x) = \dfrac{-x-4}{x+1}$



20) $f(x) = -\dfrac{3}{x-2} + 2$



21) Direct, Inverse, or neither?

A) x y = 8
B) y = 5 x + 2
C) y / 5 = 2 x

22) If x varies inversely with y and jointly with w and z and x=8 when w=4, z=3 and y=6, a) write an equation the relates x, y, w, and z, then b) find w when z=1, x=4 and y=3.

23) If x varies directly with y and x=12 when y=2, a) write an equation the relates x and y, then b) find y when x=48.

24) The variable w varies jointly with x and y. Write an equation to relate w, x, and y when w=18, x=6 and y=2. Then find x when w=9 and y=6.