MATH 0099 **NAME: _____**
Dr. Fred Katiraie

Find all numbers for which the rational expression is not defined.

1) $\dfrac{x^3+2}{x^2+8x}$

2) Find all numbers not in the domain of the function.

F (x) =

$$\frac{x^2 - 16}{x^2 + 4x - 32}$$

3) Find all numbers not in the domain of the function.

f(x) =

$$\frac{x^2 - 64}{x^2 - 2x - 63}$$

4) Multiply and simplify (Please see Example 6 in Section 6.1)

$$\frac{k^2 + 11k + 18}{k^2 + 15k + 54} \quad \frac{k^2 + 6k}{k^2 + 7k + 10}$$

5) Divide and simplify (Please see Example 7 in Section 6.1)

$$\frac{z^2+8z+12}{z^2+9z+14} \div \frac{z^2+6z}{z^2+11z+28}$$

6) Perform the following operation (if possible, simplify your answer)

$$\frac{3}{y^2-3y+2}+\frac{7}{y^2-1}$$

7) Solve the following equation

$$\frac{3}{2x+3}-\frac{1}{2x-3}=\frac{4}{4x^2-9}$$

Solve.

8) Melissa can clean the house in 4 hours, whereas her husband, Zack, can do the same job in 6 hours. They have agreed to clean the house together so that they can finish in time to watch a movie on TV. How long will it take them to clean the house together?

Solve.

9) Jeff takes 5 hr longer to build a fence than it takes Bill. When they work together, it takes them 6 hours. How long would it take Bill to do the job alone?

Find an equation of variation if the following conditions exist.

10) Suppose that y varies directly as z and y = 45 when z = 270.