Mth 098 – Intermediate Algebra – **Practice Exam 5**

NOTE: This exam should not be taken as a complete list of possible problems. It is merely intended to be an example of the difficulty level of the regular exam. To best utilize it as a *practice* exam, try to complete the exam without notes or distractions. Try to emulate the classroom environment as much as possible.

1. Find the domain of the function $f(x)=\dfrac{2x-4}{x^3+4x}$.

2. Simplify each rational expression.

   a. $\dfrac{x^2-2x}{2-x}$

   b. $\dfrac{p^2-2p-24}{p-6}$

3. Perform the indicated operation and simplify.

   $\dfrac{x^2+12x+35}{x^2+4x-5}\cdot\dfrac{x-1}{x^2+3x-28}$

4. Perform the indicated operation and simplify.

$$(x-3)\div\frac{x^2+3x-18}{x^2}$$

5. Find the LCD. (You do NOT need to add or subtract. JUST find the LCD.)

a. $\dfrac{4}{x+2}+\dfrac{x}{(x-1)^2}-\dfrac{x^2}{x^2+x-2}$

b. $\dfrac{3}{12x^2y}-\dfrac{x^2}{18y^3}$

6. Perform the indicated operation and simplify.

$$\frac{x}{x+1}-\frac{2}{x^2-1}$$

7. Perform the indicated operation and simplify.

$$\frac{x+5}{x-4}-\frac{x+2}{x-4}$$

8. Perform the indicated operation and simplify.

$$\frac{x}{x-1}-\frac{7}{x^2+5x-6}$$

9. Simplify.

$$\frac{\frac{2}{x}-\frac{2}{x^2}}{1-\frac{1}{x}}$$

10. Simplify.

$$\frac{\frac{x}{y}-\frac{y}{x}}{\frac{x+y}{x}}$$

11. Solve the equation.

$$\frac{x-1}{x-5}=\frac{4}{x-5}$$

12. Solve the equation.

$$x+\frac{6}{x}=-5$$

13. For the pair of similar triangles shown below, find the length of the two unknown sides. Use methods learned in this class.