Math 042: Exam III	**Date: Dec 07, 2009**
Name: ________________________	**Section:** ____________

1. Perform the indicated operation and simplify.

$$\frac{1}{k+3} + \frac{4}{3k}$$

Your answer: ________________________ .

2. Perform the indicated operation and simplify.

$$\frac{1}{x+3} - \frac{3}{x^2+5x+6}$$

Your answer: ________________________ .

3. Simplify

$$\frac{\frac{6}{x}+\frac{3}{x^2}}{\frac{3}{x}+1}$$

Your answer: ______________________________ .

4. Solve for x.

$$\frac{x}{x+5}=\frac{3x}{x+5}+2$$

Your answer: ______________________________ .

5. Simplify: $\sqrt{12} + \sqrt{48} - 2\sqrt{20}$ **Your answer:** ____________________________ .

6. Simplify:

$$\left(\frac{x^{1/2}y^{2/3}}{x^{1/3}y^{-1/4}}\right)^{12}$$

Your answer: ____________________________ .

7. Rationalize the denominator and simplify.

$$\frac{5}{3\sqrt{7}+2}$$

Your answer: ____________________________ .

8. Solve for y: $\sqrt{3y-4}=7$ **Your answer:** ____________________________ .

9. Solve for x: $(3x-2)^2 = 4$ **Your answer:** ____________________ .

10. Solve for n: $2n^2 - 3n - 5 = 0$ **Your answer:** ____________________ .

Extra Credit. Express the following in simplest radical form.

(a) $\sqrt{54x^7y^6}$ **Your answer:** ____________________ .

(b) $\sqrt[3]{54x^7y^6}$ **Your answer:** ____________________ .

(c) $(\sqrt{7a})^2$ **Your answer:** ____________________ .

(d) $(7\sqrt{a})^2$ **Your answer:** ____________________ .

(e) $-11^{3/2}$ **Your answer:** ____________________ .