Math 042: Exam III **Date: Dec 07, 2009**

Name: ________________________ **Section:** ____________

1. Perform the indicated operation and simplify.

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

Your answer: ________________________ .

2. Perform the indicated operation and simplify.

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

Your answer: ________________________ .

3. Simplify:

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

Your answer: ____________________________ .

4. Solve for x:

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

Your answer: ____________________________ .

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

6. Simplify:

$$\frac{(x^{1/2}y^{2/3})^6}{(x^{1/3}y^{-1/4})^{12}}$$

Your answer: ______________________ .

7. Rationalize the denominator and simplify:

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

Your answer: ____________________________ .

8. Solve for y: $\sqrt{4y-3} = 6$ **Your answer:** ____________________________ .

9. Solve for x: $(2x-3)^2 = 1$ **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) $(\sqrt{6a})^2$ **Your answer:** ______________________ .

(d) $(6\sqrt{a})^2$ **Your answer:** ______________________ .

(e) $-7^{3/2}$ **Your answer:** ______________________ .