EXAM 4 - MATH 102

YOUR NAME:_____

Friday, April 12

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Read each problem **very carefully** before starting to solve it. Each problem is worth 10 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Solve the rational equation
$$\frac{5}{2x+4} - \frac{1}{x-1} = \frac{3}{x+2}.$$

2. Julie can bike a distance of 7 miles in the same amount of time as she can walk a distance of 2 miles. If she can ride 10 mph faster than she can walk, how fast does Julie walk?

   (a) Introduce variable(s) and state their precise meaning.

   (b) Write down equation reflecting the data.

   (c) Solve the equations to obtain an answer for the question posed.

3. Evaluate and simplify as appropriate:

(a) $\left(\dfrac{125}{27}\right)^{-2/3} =$

(b) $\sqrt[3]{\dfrac{250b^4}{4a^7}} =$

(c) $(3\sqrt{2}+5)(3\sqrt{2}+5) =$

(d) $\sqrt{12x^5} - \sqrt{18x} - \sqrt{300x^5} + \sqrt{98x} =$

(e) $\dfrac{2\sqrt{3}}{3\sqrt{2}-\sqrt{3}} =$

4. Solve the radical equation

$$\sqrt{2x^2 - 3x - 10} = x.$$

5. Solve the equation

$$(x + 3)^{-1/3} = \frac{1}{3}.$$