EXAM 3 - MATH 102

YOUR NAME:_____

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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. Add the fractions and simplify

$$\frac{3}{4 - 2x} + \frac{6}{x^2 - 4} + \frac{3}{x + 2} =$$

2. Divide the fractions and simplify

$$\frac{x^3 - 9x}{1 - x^2} \div \frac{x^3 + 6x^2 + 9x}{x - 1} =$$

3. Solve the equation $\dfrac{x + 3}{2x + 3} = \dfrac{x - 3}{x - 1}$.

4. Solve the equation

$$\frac{5}{x} - \frac{4}{x+2} = \frac{1}{5} + \frac{1}{5x}.$$

5. A group of sailors plans to share equally the cost and use of a $72,000 boat. If they can get three more sailors to participate then the cost per person will be reduced by $2,000. How many sailors are in the original group?