

YOUR NAME:\_\_\_\_\_

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Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Add the fractions and reduce your answer to lowest terms

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

2. Subtract the fractions and reduce your answer to lowest terms

$$\frac{2}{x^2-4} - \frac{5}{x^2-3x-10}$$

3. Simplify the following complex fraction

$$\frac{\frac{2}{x-3} + \frac{4}{x}}{\frac{3}{x-2} + \frac{1}{x}}$$

4. Perform the long division of  $x^3 + 6x^2 - 3x - 5$  by  $x - 3$ .