

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. Perform the long division and write your answer in the appropriate form:

$$(5x^3 - 3x^2 + 5x - 1) \div (x^2 + 2).$$

2. Solve the rational equation

$$\frac{1}{x-2} - \frac{2}{x+3} = \frac{11}{x^2 + x - 6}.$$

3. Heather can drive 240 miles in the same time as it takes Taylor to drive 220 miles. If Heather drives 5 mph faster than Taylor, then how fast does Heather drive?
- Suppose that x mph is Heather's speed. Write an equation reflecting the data in the problem, taking into account the common time interval during which the girls drive.
 - Solve the equation to find Heather's speed.