

Name: _____ Section: _____

Problem 1. State the factoring formula for each of the following expressions (2 points).

$$A^2 - B^2 =$$

$$A^3 - B^3 =$$

Problem 2. Factor the following expressions (2 points).

$$4x^2 - y^2 =$$

$$8x^3 - y^3 =$$

Problem 3. Simplify the following expression completely (1 point).

$$\frac{4x^2 - y^2}{8x^3 - y^3} =$$

Problem 4. Simplify the following expression completely, and rationalize the denominator (5 points).

$$\frac{\frac{4x^2 - y^2}{8x^3 - y^3} - \frac{yz}{4x^2z + 2xyz + y^2z}}{\frac{8\sqrt[3]{x^5}}{8x^2 + 4xy + 2y^2}}$$