Polynomial Division

1. Division by a monomial. Divide the polynomials, and check your answer with multiplication.

$(36y + 24y^2 + 6y^3) \div (3y)$ $(25m^5n - 10m^4n + m^3) \div (5m^3n)$

2. Division by a binomial. Divide the polynomials by using long division. Check your answer by multiplication. Be sure your polynomial is written in descending order, and it is easiest to use place holders like $0x^n$ for any missing terms.

$(3x^3 + 2x^2 - 7x + 2) \div (x + 2)$

$(-6x + 8x^3 + 22) \div (2x - 1)$

3. Divide the following. Check your answers with multiplication.

$(81x^4 - 1) \div (3x + 1)$

$(x^4 - x^3 - x^2 + 4x - 2) \div (x^2 + x - 1)$

$(2m^3 - 4m^2 + 5m - 33) \div (m - 3)$