

Number:

Textbook Section:

Title:

1. Use synthetic division to find the remainder when $P(x) = x^3 - 3x^2 + 5x - 12$ is divided by $x - 4$.

2. Evaluate $P(4)$ using P from the previous example.

The Remainder Theorem:

3. Use the Remainder Theorem to evaluate $f(5)$ for $f(x) = 3x^3 - 12x^2 - 9x + 1$.

4. Evaluate $P(4)$ for $P(x) = x^6 - 16x^4 + x^2 - 16$.

5. Divide: $(x^6 - 16x^4 + x^2 - 16) \div (x - 4)$

The Factor Theorem

6. Let $g(x) = 2x^3 + 7x^2 + 6x - 5$.

a) Is $x + 2$ a factor of g ?

b) Is $x - \frac{1}{2}$ a factor of g ?