NAME _____ DATE _____ PERIOD _____

5-6 Study Guide and Intervention

The Remainder and Factor Theorems

Example 2 **If $f(x) = 5x^3 + 2x - 1$, find $f(3)$.**

3	5	0	2	−1
		15	45	141
	5	15	47	140

The remainder is 140, so $f(3) = 140$.

Use synthetic substitution to find $f(2)$ and $f(-1)$ for each function.

1. $f(x) = -3x^2 + 5x - 1$

2. $f(x) = 4x^2 + 6x - 7$

Use synthetic substitution to find $f(2)$ and $f(-1)$ for each function.

3. $f(x) = -x^3 + 3x^2 - 5$

4. $f(x) = x^4 + 11x^2 - 1$

5. $f(x) = 2x^3 + x^2 - 5x + 3$

6. $f(x) = 3x^3 - 4x + 2$

Use synthetic substitution to find $f(2)$ and $f(-1)$ for each function.

7. $f(x) = 5x^3 - 4x^2 + 2$

8. $f(x) = 2x^4 - 4x^3 + 3x^2 + x - 6$

9. $f(x) = 5x^4 + 3x^3 - 4x^2 - 2x + 4$

10. $f(x) = 3x^4 - 2x^3 - x^2 + 2x - 5$

Use synthetic substitution to find $f(2)$ and $f(-1)$ for each function.

11. $f(x) = 2x^4 - 4x^3 - x^2 - 6x + 3$

12. $f(x) = 4x^4 - 4x^3 + 3x^2 - 2x - 3$