

Algebra II
Section 6-3 Review

Name _____

Use synthetic substitution to find $f(?)$ for each function.

1) $f(x) = 2x^3 + 10x^2 + 5x - 9$
Find $f(-4)$

2) $f(x) = x^3 - 8x + 14$
Find $f(2)$

3) $f(x) = -x^4 - 3x^3 + 33$
Find $f(-5)$

Determine if the binomial given is a factor of the polynomial given (yes or no). Must include proof.

4) $x^3 + 5x^2 + 42$; $x + 6$

5) $x^5 - 2x^4 + 4x^3 - 8x^2 - 5x + 10$; $x - 2$

Given a polynomial and one of its *factors*, find the remaining *factors* of the polynomial.

6) $x^3 + 7x^2 + 7x - 15$; $x - 1$

7) $x^3 - 9x^2 + 27x - 27$; $x - 3$

8) $x^3 - x^2 - 14x + 24$; $x + 4$

9) $4x^3 - 12x^2 - x + 3$; $x - 3$

10) $4x^3 + 3x^2 - 16x - 12$; $x + 2$

11) $x^4 + 5x^3 + 8x + 40$; $x + 5$