

Review Chapter 6 Test Alg 2

Rewrite the polynomial in standard form. Then identify the leading coefficient, degree, and number of terms. Name the polynomial.

1) $7x^2 + 2x^3 + 2$

Add or subtract.

2) $(5x^2 + 3x + 2) + (-3x^2 - 7x + 5)$

3) $(-7x^2 + 2x + 1) - (-2x^2 - 3x + 2)$

Multiply.

4) $5x^2(3x^3 - 2x - 1)$

5) $(x + 2)(x + 3)(x - 1)$

6) $(5x + 2)^3$

7) $(x^2 + 2x + 1)(3x^2 + 4x - 3)$

8) Divide using long division: $(2x^3 + 9x^2 + 13x + 7) \div (2x + 3)$

9) Divide using synthetic division: $(2x^4 - 3x^3 + 2x^2 + 1) \div (x - 3)$

10) Find $p(4)$ using synthetic substitution for $p(x) = 3x^4 - 5x^3 + 3x^2 + 2x + 1$.

11) Determine whether $x - 2$ is a factor of $p(x) = x^3 + 3x^2 - 4x - 12$.

Factor completely.

12) $x^4 - x^2 - 12$

13) $x^3 + 3x^2 - 4x - 12$

14) $x^3 + 27$

15) $125x^3 - 64$

Graph each polynomial function using its zeros and a table.

16) $f(x) = x^3 + 7x^2 - 9x - 63$

17) $f(x) = 2x^3 - 2x^2 - 24x$

18) $f(x) = x^4 - 10x^2 + 9$

19) $f(x) = x^3 + 2x^2 - 5x - 6$

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