

Name _____

Date _____

<p>1. $f(x) = 5 - 3x^3 + 2x^4 - 4x$</p> <p>Standard Form: _____</p> <p>Leading Coefficient: _____</p> <p>Constant: _____</p> <p>Name by Degree: _____</p> <p>Name by # of Terms: _____</p>	<p>2. Give an example a quadratic binomial in standard form with a leading coefficient of 17 and a constant of -12. Write your answer in function notation.</p>
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Add/Subtract/Multiply/Binomial Expansion

<p>3. $(2x - 7 + 3x^3) + (x^3 - 2x^2 + 5x)$</p>	<p>4. $(4m^4 - 3m^2 + m - 5) - (2m^2 - 3m^4 - 3m + 1)$</p>
<p>5. $(2x - 3)(x + 2)$</p>	<p>6. $(3z - 1)(z^2 + 2z - 3)$</p>
<p>7. $(a + b)(a^2 + 2ab - b^2)$</p>	<p>8. $2x^5(x^3 - 3x^2 + 7)$</p>
<p>9. $(x^2 + 4y)^4$</p>	
<p>10. $(2k - 3)^3$</p>	
<p>11. $(5x - 3)^5$</p>	
<p>12. An object is propelled straight up into the air with an initial velocity of 32 ft/sec. The height at any time t is given by $s(t) = -16t^2 + 32t + 6$. Find the maximum height of the object and the time it hits the ground.</p>	

Combine Functions $f(x) = x^2 - 3x + 4$

$g(x) = 2x + 1$

$h(x) = 3x^3 + 2x - 1$

13. $3f(x) + 2g(x) - 4h(x)$

14. $4g(3) + h(-2)$

15. $g(x) \cdot f(x)$

16. $f \circ g(x)$

17. $g(-2p+5)+7$

18. $g(f(h(-1)))$

Divide Polynomials

19. $(x^4 - 6x^3 - 40x + 33) \div (x - 7)$

20. $(4x^4 - 15x^3 + 7x^2 - 1) \div (x^3 - x + 2)$

21. $(x^3 + 2x^2 - 6x - 9) \div (x - 2)$

22. $(6x^3 + 13x^2 - 5) \div (3x^2 + 2x)$

Review: Solve using any method.

23. $5k^2 = -10k - 7$

24. $-9p = -2p^2 + 110$

25. $3x^2 + 29x = 0$