

## Looking Ahead: Algebra 2 Unit 6

The questions below are examples of the type of questions you'll see on your **Semester 1 Final**, and the **Semester 2 Final**. This is how these tests will ask you to apply your skills from **Unit 6**, as well as your common sense math skills. They are structured in a way that is deliberately complicated, but the skills are the same as what you have learned up to this point.

**Semester 1 Final Examples**

1.	Add. Write your answer in standard form. $(-6b^5 + 3b^2) + (5b^6 - 3b^5 + 16b^2 - 9)$	6.	Divide. $(x^2 + 5x - 2) \div (x + 4)$
2.	If $x$ is a real number, for what values of $x$ is the equation $\frac{8x+28}{4} = 2x + 7$ true? A. all values of $x$ C. no values of $x$ B. some values of $x$ D. impossible to determine	7.	On a recent test, Alex wrote the equation $\frac{x^2-16}{x-4} = x + 4$ . Which of the following statements is correct about the equation that he wrote? A. The equation is always true. B. The equation is always true, except when $x = 4$ . C. The equation is sometimes true when $x = 4$ . D. The equation is never true.
3.	Find the product $5m^5n^2(-2mn^4 + m^3n^3)$	8.	Find $P(-5)$ using the Remainder Theorem. $P(x) = x^4 + 5x^2 - 11x + 8$ for $x = -5$
4.	Factor $x^3 + 2x^2 - 25x - 50$ completely. A. $(x + 2)(x^2 + 25)$ C. $(x + 2)(x + 5)(x - 5)$ B. $(x - 2)(x^2 + 25)$ D. $(x - 2)(x + 5)(x - 5)$	9.	Completely factor the expression $32x^5 - 256x^2y^3$ A. $4x^2(2x - 4y)^3$ B. $4x^2(8x^3 - 64y^3)$ C. $4x^2(2x - 4y)(4x^2 - 8xy + 16y^2)$ D. $4x^2(2x - 4y)(4x^2 + 8xy + 16y^2)$
5.	Subtract. Write your answer in standard form. $(9x^2 - 5x + 2) - (7x^2 - 14)$	10.	Find the product $(9x + 3)(x^5 - 4x^3 + 2)$

**Semester 2 Final Examples**

11.	Use the binomial theorem to expand. $(3g - h)^4$	12.	Determine the product. $(3m + 2)(6m^3 - 4m + 2)$
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