

**LESSON**  
**4-1**

# Understanding Polynomial Expressions

## Practice and Problem Solving: A/B

Identify each expression as a monomial, a binomial, a trinomial, or none of the above. Write the degree of each expression.

1.  $6b^2 - 7$

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2.  $x^2y - 9x^4y^2 + 3xy$

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3.  $35r^3s$

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4.  $3p + \frac{2p}{q} - 5q$

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5.  $4ab^5 + 2ab - 3a^4b^3$

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6.  $st + t^{0.5}$

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Simplify each expression.

7.  $6n^3 - n^2 + 3n^4 + 5n^2$

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8.  $c^3 + c^2 + 2c - 3c^3 - c^2 - 4c$

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9.  $11b^2 + 3b - 1 - 2b^2 - 2b - 8$

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10.  $a^4b^3 + 9a^3b^4 - 3a^4b^3 - 4a^3b^4$

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11.  $9xy + 5x^2 + 15x - 10xy$

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12.  $3p^2q + 8p^3 - 2p^2q + 2p + 5p^3$

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Determine the polynomial that has the greater value for the given value of  $x$ .

13.  $4x^2 - 5x - 2$  or  $5x^2 - 2x - 4$  for  $x = 6$

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14.  $6x^3 - 4x^2 + 7$  or  $7x^3 - 6x^2 + 4$  for  $x = 3$

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Solve.

15. A rocket is launched from the top of an 80-foot cliff with an initial velocity of 88 feet per second. The height of the rocket  $t$  seconds after launch is given by the equation  $h = -16t^2 + 88t + 80$ . How high will the rocket be after 2 seconds?

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16. Antoine is making a banner in the shape of a triangle. He wants to line the banner with a decorative border. How long will the border be?

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