

## LESSON

**Practice B****6-2** *Multiplying Polynomials*

Find each product.

1.  $4x^2(3x^2 + 1)$   
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2.  $-9x(x^2 + 2x + 4)$   
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3.  $-6x^2(x^3 + 7x^2 - 4x + 3)$   
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4.  $x^3(-4x^3 + 10x^2 - 7x + 2)$   
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5.  $-5m^3(7n^4 - 2mn^3 + 6)$   
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6.  $(x + 2)(y^2 + 2y - 12)$   
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7.  $(p + q)(4p^2 - p - 8q^2 - q)$   
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8.  $(2x^2 + xy - y)(y^2 + 3x)$   
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Expand each expression.

9.  $(3x - 1)^3$   
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10.  $(x - 4)^4$   
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11.  $3(a - 4b)^2$   
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12.  $5(x^2 - 2y^3)^3$   
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Solve.

13. A biologist has found that the number of branches on a certain rare tree in its first few years of life can be modeled by the polynomial  $b(y) = 4y^2 + y$ . The number of leaves on each branch can be modeled by the polynomial  $l(y) = 2y^3 + 3y^2 + y$ , where  $y$  is the number of years after the tree reaches a height of 6 feet. Write a polynomial describing the total number of leaves on the tree.
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