Polynomials Operations

Name _____   Date _____   Class_____

Multiplying Polynomial Expressions by Monomials

Practice and Problem Solving: Modified

Multiply. The first one is done for you.

1. $4x^4(8x^2)$

   $32x^6$

2. $5p(3p^3)$

3. $11a^2(2a^5b^4)$

4. $-6c^3(-3c^2d)$

5. $9rs^2(5r^3s)$

6. $8x^3y^2(-2x^4y^3)$

Find the product. The first one is done for you.

7. $7(3a^2 + 2a - 7)$

   $21a^2 + 14a - 49$

8. $9(3x^2 - 4x - 3)$

9. $6s^3(-2s^2 + 4s - 10)$

10. $5a^2(6a^4 - 2a^2 - 1)$

11. $8r(-7r^2 - 2pr + 8p)$

12. $2n^3(3n^3 + m^2n^2 - 4n)$

13. $-3x^4y^2(8x^2 - 5xy + 9y^2)$

14. $5v^2w^3(2v^3 + 4v^2w - w^2)$

Simplify each expression.

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

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

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

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

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

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

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Subtract. The first one is done for you.

1. $8p + 6$
   $\underline{- (4p + 2)}$

   $\underline{\textbf{4p + 4}\qquad\qquad}$

2. $9y^2 - 6y + 3$
   $\underline{- (5y^2 - 3y + 2)}$

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3. $5z^3 + 8z^2 + 5$
   $\underline{- (2z^3 + 3z^2 - 2)}$

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4. $20k + 6$
   $\underline{- (10k + 2)}$

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5. $7s^3 + 4s + 30$
   $\underline{- (5s^3 + 2s - 10)}$

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6. $25a^4 + 9a^2 + 6a$
   $\underline{- (10a^4 - 2a^2 + a)}$

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7. $(5x^3 + 14) - (2x^3 - 1)$

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8. $(15g^2 + 6g - 3) - (10g^2 + 2g + 2)$

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9. $(7p^5 + 8) - (3p^5 + 6)$

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10. $(4b^2 + 8b - 1) - (2b^2 + 3b + 5)$

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