NAME Key DATE _____ PERIOD _____

8-2 Practice

Multiplying a Polynomial by a Monomial

Find each product.

1. $2h(-7h^2 - 4h)$
   $-14h^3 - 8h^2$

2. $6pq(3p^2 + 4q)$
   $18p^3q + 24pq^2$

3. $5jk(3jk + 2k)$
   $15j^2k^2 + 10jk^2$

4. $-3rt(-2t^2 + 3r)$
   $6rt^3 - 9r^2t$

5. $-\frac{1}{4}m(8m^2 + m - 7)$
   $-2m^3 - \frac{1}{4}m^2 + \frac{7}{4}m$

6. $-\frac{2}{3}n^2(-9n^2 + 3n + 6)$
   $6n^4 - 2n^3 - 4n^2$

Simplify each expression.

7. $-2\ell(3\ell - 4) + 7\ell$
   $-6\ell^2 + 15\ell$

8. $5w(-7w + 3) + 2w(-2w^2 + 19w + 2)$
   $-4w^3 + 3w^2 + 19w$

9. $6t(2t - 3) - 5(2t^2 + 9t - 3)$
   $2t^2 - 63t + 15$

10. $-2(3m^3 + 5m + 6) + 3m(2m^2 + 3m + 1)$
    $9m^2 - 7m - 12$

11. $-3g(7g - 2) + 3(g^2 + 2g + 1) - 3g(-5g + 3)$ $-3g^2 + 3g + 3$

Solve each equation.

12. $5(2t - 1) + 3 = 3(3t + 2)$ 8

13. $3(3u + 2) + 5 = 2(2u - 2)$ -3

14. $4(8n + 3) - 5 = 2(6n + 8) + 1$ $\frac{1}{2}$

15. $8(3b + 1) = 4(b + 3) - 9$ $-\frac{1}{4}$

16. $t(t + 4) - 1 = t(t + 2) + 2$ $\frac{3}{2}$

17. $u(u - 5) + 8u = u(u + 2) - 4$ -4

18. **NUMBER THEORY** Let x be an integer. What is the product of twice the integer added to three times the next consecutive integer? $5x + 3$

19. **INVESTMENTS** Kent invested \$5000 in a retirement plan. He allocated x dollars of the money to a bond account that earns 4% interest per year and the rest to a traditional account that earns 5% interest per year.

    a. Write an expression that represents the amount of money invested in the traditional account. $5000 - x$

    b. Write a polynomial model in simplest form for the total amount of money T Kent has invested after one year. (*Hint:* Each account has $A + IA$ dollars, where A is the original amount in the account and I is its interest rate.) $T = 5250 - 0.01x$

    c. If Kent put \$500 in the bond account, how much money does he have in his retirement plan after one year? \$5245

Lesson 8-2

NAME Key DATE _____ PERIOD _____

8-3 Practice

Multiplying Polynomials

Find each product.

1. $(q + 6)(q + 5)$
   $q^2 + 11q + 30$

2. $(x + 7)(x + 4)$
   $x^2 + 11x + 28$

3. $(n - 4)(n - 6)$
   $n^2 - 10n + 24$

4. $(a + 5)(a - 6)$
   $a^2 - a - 30$

5. $(4b + 6)(b - 4)$
   $4b^2 - 10b - 24$

6. $(2x - 9)(2x + 4)$
   $4x^2 - 10x - 36$

7. $(6a - 3)(7a - 4)$
   $42a^2 - 45a + 12$

8. $(2x - 2)(5x - 4)$
   $10x^2 - 18x + 8$

9. $(3a - b)(2a - b)$
   $6a^2 - 5ab + b^2$

10. $(4g + 3h)(2g + 3h)$
    $8g^2 + 18gh + 9h^2$

11. $(m + 5)(m^2 + 4m - 8)$
    $m^3 + 9m^2 + 12m - 40$

12. $(t + 3)(t^2 + 4t + 7)$
    $t^3 + 7t^2 + 19t + 21$

13. $(2h + 3)(2h^2 + 3h + 4)$
    $4h^3 + 12h^2 + 17h + 12$

14. $(3d + 3)(2d^2 + 5d - 2)$
    $6d^3 + 21d^2 + 9d - 6$

15. $(3q + 2)(9q^2 - 12q + 4)$
    $27q^3 - 18q^2 - 12q + 8$

16. $(3r + 2)(9r^2 + 6r + 4)$
    $27r^3 + 36r^2 + 24r + 8$

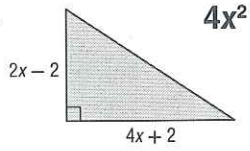
17. $(3n^2 + 2n - 1)(2n^2 + n + 9)$
    $6n^4 + 7n^3 + 27n^2 + 17n - 9$

18. $(2t^2 + t + 3)(4t^2 + 2t - 2)$
    $8t^4 + 8t^3 + 10t^2 + 4t - 6$

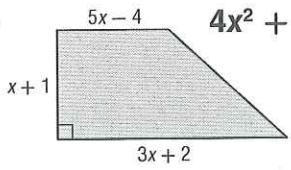
19. $(2x^2 - 2x - 3)(2x^2 - 4x + 3)$
    $4x^4 - 12x^3 + 8x^2 + 6x - 9$

20. $(3y^2 + 2y + 2)(3y^2 - 4y - 5)$
    $9y^4 - 6y^3 - 17y^2 - 18y - 10$

GEOMETRY Write an expression to represent the area of each figure.

21. 

$4x^2 - 2x - 2$ units^2

22. 

$4x^2 + 3x - 1$ units^2

23. **NUMBER THEORY** Let x be an even integer. What is the product of the next two consecutive even integers? $x^2 + 6x + 8$

24. **GEOMETRY** The volume of a rectangular pyramid is one third the product of the area of its base and its height. Find an expression for the volume of a rectangular pyramid whose base has an area of $3x^2 + 12x + 9$ square feet and whose height is $x + 3$ feet.
    $x^3 + 7x^2 + 15x + 9$ ft^3

Lesson 8-3