Name _____ Date _____ Class _____

SKILL 62

Skills Readiness

Multiply Monomials and Polynomials

Definition 1: A monomial is a number, a variable, or a product of a number and one or more variables with whole number exponents.

Definition 2: A polynomial is a monomial or a sum or difference of monomials.

To multiply a polynomial by a monomial:
Use the Distributive Property to multiply each term in the polynomial by the monomial. To do this, find the product of the coefficients (or constants) and the product of the variables. Remember, multiply the numbers, but add the exponents of the variables.

Example 1: $15(3x + 2)$ Distribute.
$= 15(3x) + 15(2)$ Multiply.
$= (15)(3)x + (15)(2)$
$= 45x + 30$

Example 2: $5y(3y^2 - 6y + 5)$ Distribute.
$= 5y(3y^2) - 5y(6y) + 5y(5)$ Multiply.
$= (5)(3)y^{1+2} - (5)(6)y^{1+1} + (5)(5)y$
$= 15y^3 - 30y^2 + 25y$

Practice on Your Own
Multiply.

1. $8(2d + 5)$ _____

2. $m(m - 1)$ _____

3. $3b(3b + 3)$ _____

4. $4(12 - 15q)$ _____

5. $5p(p + 6)$ _____

6. $10w(5 - 3w)$ _____

7. $2r(-5 - r^3)$ _____

8. $n^2(n^2 + 1)$ _____

9. $3g(3g + 1)$ _____

10. $2e^2(e^2 - e)$ _____

11. $2h(h^2 - 5h + 15)$ _____

12. $xy(x^3 + xy^5)$ _____

Check
Multiply.

13. $3(20x - 10)$ _____

14. $4y(y - 9)$ _____

15. $11(5 - 2k)$ _____

16. $7t(7 - 7t)$ _____

17. $w^3(1 - w)$ _____

18. $3g(g^2 - 5g)$ _____

19. $p(p^2 - 2p + 5)$ _____

20. $u^2v^2(3uv + v^2)$ _____