

**CHAPTER 9 Test**

*First, Outer, Inner, Last terms*

1. Explain how to use the FOIL method to multiply two binomials.
2. Explain how to subtract polynomials. *combine like terms*
3. **You Try It!** Mark says that  $-4wx^0y^3$  is a monomial of degree 2. Linda disagrees. Who is correct? Explain your reasoning.  
*↳ not a monomial due to negative exponent*

State whether each expression is a polynomial. If it is a polynomial, identify it as either a monomial, binomial, or trinomial, and state its degree.

4.  $4x^3 + 3x^2$  *Yes, binomial, 3*      5.  $12r^{-2} - 3r + 6$  *No*      6.  $m^0$  *Yes, monomial, 0*      7.  $5w^3yz^2$  *Yes, monomial, 6*

Find each sum or difference.

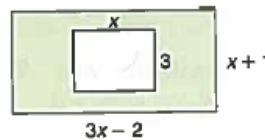
8. 
$$\begin{array}{r} 3x^2 - 5x + 4 \\ (+) 5x^2 + 7x + 8 \\ \hline 8x^2 + 2x + 12 \end{array}$$
9. 
$$\begin{array}{r} 8z^2 - 5z \\ (-) 6z^2 + 3z + 4 \\ \hline 2z^2 - 2z - 4 \end{array}$$
10.  $(y^3 + 6y^2 + 4y) + (2y^3 + 7y)$   
 *$-y^3 + 6y^2 + 11y$*
11.  $(-9h^2 + 5g) + (2g + 7h^2)$   
 *$-2h^2 + -3g$*

Find each product.

12.  $3x(2x^2 + 4x + 5) = 6x^3 + 12x^2 + 15x$
13.  $5t^2(-2t + 3t^3 + 4) = -10t^3 + 15t^5 + 20t^2$
14.  $(x + 2)(x + 3) = x^2 + 5x + 6$
15.  $(y + 4)(y + 5) = y^2 + 9y + 20$
16.  $(x + 2)(x + 5) = x^2 + 3x + 10$
17.  $(3n + 4)(2n + 3) = 6n^2 + 17n + 12$
18.  $(x + 5)^2 = x^2 + 10x + 25$
19.  $(2w + 3)^2 = 4w^2 + 12w + 9$
20.  $(7r + 4)(7r + 4) = 49r^2 + 56r + 16$
21.  $(m + 3n)(m + 3n) = m^2 + 6mn + 9n^2$

Solve.

22.  $2(y - 3) + 9 = 5y - 6$      *$y = 3$*
23.  $x(x + 4) + 5x = x(x - 1) + 20$   
 *$x = 2$*



Exercise 24

24. **Geometry** Find the area of the shaded region.  *$3x^2 - 2x - 2$  units<sup>2</sup>*
25. **Family Life** Mrs. Douglas wants her five children, Aaron, Briana, Casey, Danielle, and Eddie, to spend a total of 35 hours on chores this week. Aaron, the oldest, works twice as many hours as the others. Danielle has earned an hour off from chores by getting an A on her algebra test. If  $x$  is the number of hours Danielle will work, then Briana, Casey, and Eddie will each work  $x + 1$  hours, and Aaron will work twice as long,  $2x + 2$  hours.
- Write an equation to represent the number of hours the children will work.
  - Use the equation to determine the number of hours each child will work on chores this week.



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- a.  $x + 3(x + 1) + 2x + 2 = 35$
- b. Danielle = 5 hours  
Briana, Casey, Eddie = 6 hours each  
Aaron = 12 hours