

## Section 5.5 Practice Master

1. Use algebra tiles or a diagram to factor each trinomial.
  - a)  $2x^2 + 7x + 3$
  - b)  $6x^2 + 11x + 4$
  - c)  $3x^2 + 7x + 2$
  - d)  $4x^2 + 18x + 20$
2. Factor.
  - a)  $6x^2 + 10x - 4$
  - b)  $56x^2 - 9x - 2$
  - c)  $9x^2 + 6x + 1$
  - d)  $12c^2 - 26c - 16$
  - e)  $2d^2 - 11d - 6$
  - f)  $2r^2 + 13r + 20$
  - g)  $6s^2 - 29s + 35$
  - h)  $15r^2 - 7r - 2$
  - i)  $4r^2 - 20r + 25$
  - j)  $13x^2 - 57x + 20$
3. Factor.
  - a)  $6x^2 - 5xy - 4y^2$
  - b)  $9x^2 + 12xy + 4y^2$
  - c)  $12r^2 + 7rs - 10s^2$
  - d)  $15r^2 - 23rs + 4s^2$
  - e)  $2x^2 - 19xy + 42y^2$
  - f)  $18y^2 + 21yx - 4x^2$
4. Find two values of  $k$  so that each trinomial can be factored over the integers.
  - a)  $12x^2 + kx + 14$
  - b)  $6x^2 + kx + 10$
  - c)  $4x^2 - 12x + k$
  - d)  $kx^2 - 40xy + 16y^2$
5. The area of a rectangular parking lot is represented by  $A = 6x^2 - 19x - 7$ .
  - a) Factor the expression to find expressions for the length and width.
  - b) If  $x$  represents 15 m, what are the length and width of the parking lot?
6. The height,  $h$ , in metres, of a baseball above the ground relative to the horizontal distance,  $d$ , in metres, from the batter is given by  $h = -0.005d^2 + 0.49d + 1$ .
  - a) Write the right side of the equation in factored form. Hint: First divide each term by the common factor,  $-0.005$ .
  - b) At what horizontal distance from the batter will the baseball hit the ground if it is not caught by an outfielder?
7. Sydney Harbour Bridge in Australia is unusually wide for a long-span bridge. It carries two rail lines, eight road lanes, a cycle lane, and a walkway.
  - a) Factor the expression  $10x^2 - 7x - 3$  to find binomials that represent the length and the width of the bridge.
  - b) If  $x$  represents 50 m, what are the length and the width of the bridge, in metres?
8. Factor.
  - a)  $10x^4 - 3x^2 - 18$
  - b)  $20x^6 - 59x^3y^2 + 42y^4$