Write the polynomial in standard form. Identify the degree and classify the polynomial by the number of terms.

1. $-2.1w^3$

2. $7k + 4 - 3k^2$

3. $-c^8 + 9c^{12}$

Find the sum or difference.

4. $(-2p + 4) - (p^2 - 6p + 8)$

5. $(4s^2 + 2st + t) + (-3s^2 + 5st - 4t)$

Find the product.

6. $(h - 5)(h - 8)$

7. $(2w - 3)(2w + 5)$

8. $(z + 11)(z - 11)$

Factor the polynomial.

9. $7x^2 - 21x$

10. $n^2 + 7n + 10$

11. $m^2 - 2m - 24$

12. $6g^2 + 23g + 7$

13. $y^2 - 100$

14. $b^3 - 2b^2 + 3b - 6$

Solve the equation.

15. $(n - 1)(n + 6) = 0$

16. $3h^2 = -12h$

**17.** $s^2 - 15s + 50 = 0$

18. $5k^2 + 22k - 15 = 0$

19. $d^2 + 14d + 49 = 0$

20. $6x^4 + 8x^2 = 26x^3$

21. TIME The expression $\pi(r - 3)^2$ represents the area covered by the hour hand on a clock in one rotation, where r is the radius of the entire clock. Write a polynomial that represents the area covered by the hour hand in one rotation.

22. TRAMPOLINE You are jumping on a trampoline. Your height y (in feet) above the trampoline after t seconds can be represented by $y = -16t^2 + 24t$. How many seconds are you in the air?

s ft
12 ft
s ft
6 ft
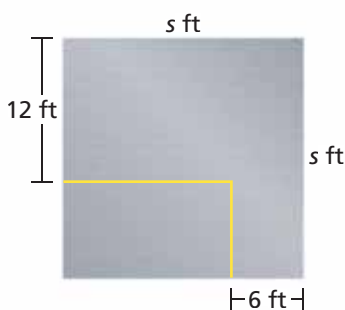
23. CEMENT You pour cement in a rectangular region of a square garage. The area of the rectangular region is 112 square feet.

a. What is the area of the garage floor?

b. You place caution tape along the two sides of the newly cemented region that are not on the wall. How many feet of caution tape do you use?

24. ARCHERY The area (in square inches) of the target can be represented by $\pi(x^2 + 6x + 9)$.

a. Find the areas of the red bull's eye and the gray ring when the area of the target is 25π square inches. Write your answer in terms of π.

b. Write a binomial that represents the radius of the target.

c. What is the width of the gray ring? Does it change as x changes? Does its area change as x changes? Explain.

x in.