7.1–7.4 Quiz

Write the polynomial in standard form. Identify the degree and leading coefficient of the polynomial. Then classify the polynomial by the number of terms. *(Section 7.1)*

1. $-8q^3$
2. $9 + d^2 - 3d$
3. $\frac{2}{3}m^4 - \frac{5}{6}m^6$
4. $-1.3z + 3z^4 + 7.4z^2$

Find the sum or difference. *(Section 7.1)*

5. $(2x^2 + 5) + (-x^2 + 4)$
6. $(-3n^2 + n) - (2n^2 - 7)$
7. $(-p^2 + 4p) - (p^2 - 3p + 15)$
8. $(a^2 - 3ab + b^2) + (-a^2 + ab + b^2)$

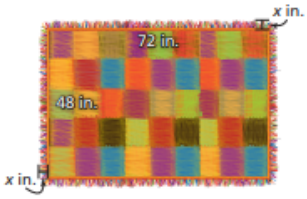
Find the product. *(Section 7.2 and Section 7.3)*

9. $(w + 6)(w + 7)$
10. $(3 - 4d)(2d - 5)$
11. $(y + 9)(y^2 + 2y - 3)$
12. $(3z - 5)(3z + 5)$
13. $(t + 5)^2$
14. $(2q - 6)^2$

Solve the equation. *(Section 7.4)*

15. $5x^2 - 15x = 0$
16. $(8 - g)(8 - g) = 0$
17. $(3p + 7)(3p - 7)(p + 8) = 0$
18. $-3y(y - 8)(2y + 1) = 0$

19. You are making a blanket with a fringe border of equal width on each side. *(Section 7.1 and Section 7.2)*
    a. Write a polynomial that represents the perimeter of the blanket including the fringe.
    b. Write a polynomial that represents the area of the blanket including the fringe.
    c. Find the perimeter and the area of the blanket including the fringe when the width of the fringe is 4 inches.



20. You are saving money to buy an electric guitar. You deposit $1000 in an account that earns interest compounded annually. The expression $1000(1 + r)^2$ represents the balance after 2 years, where r is the annual interest rate in decimal form. *(Section 7.3)*
    a. Write the polynomial in standard form that represents the balance of your account after 2 years.
    b. The interest rate is 3%. What is the balance of your account after 2 years?
    c. The guitar costs $1100. Do you have enough money in your account *after 3 years*? Explain.

21. The front of a storage bunker can be modeled by $y = -\frac{5}{216}(x - 72)(x + 72)$, where x and y are measured in inches. The x-axis represents the ground. Find the width of the bunker at ground level. *(Section 7.4)*