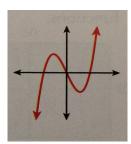
CHAPTER 8 TEST Polynomial Functions

- 1. What is the degree of the monomial 5xy⁴z?
- 2. For $f(x) = 2x^2 + 4x 6$ and $g(x) = 2x^2 + 2x + 8$, find f(x) g(x).
- 3. Rewrite the polynomial $3x^3 + 2x^4 7x + x^2$ in standard form. Identify the leading coefficient and name the polynomial.
- 4. What is the degree of the polynomial function $h(x) = 7x^3 x^6 + x$?
- 5. Evaluate $P(x) = \frac{1}{2}x^3 x^2 + 8$ for x = -2.
- 6. Multiply $(y 3) (y^2 6y 9)$.
- 7. Find the product a^2b ($2a^3b 5ab^4$).
- 8. What is the remainder when $2x^2 + 6x + 3$ is divided by x + 3?
- 9. What is equivalent to $(x^2 + 3x 28) \div (x 4)$?
- 10. Which is a factor of $x^3 + 2x^2 9x + 30$? Justify your answer.
 - A. x + 2
- B. x-3
- D. x 6

- 11. Factor the expression $4b^3 + 3b^2 16b 12$.
- 12. A polynomial has zeros $3 \sqrt{2}$, 4 and 6i. What is the minimum degree of the polynomial?
- 13. Using a graphing calculator, graph the function $h(x) = x^4 6x^2 + 10$. Sketch the graph and identify the number of real zeros.
- 14. What is the third term of the binomial expansion of $(x-4)^6$?
- 15. Use synthetic division to evaluate $f(x) = 3x^4 6x^2 + 12$ for x = -2.
- 16. How many turning points will a quartic function with four real zeros have?
- 17. Which function could describe the graph at the right?
 - A. $f(x) = -2x^5 + x 4$
- C. $f(x) = 3x^3 9x$
- B. $f(x) = -x^3 + 5x^2 + 4x + 3$ D. $f(x) = \frac{1}{4}x^2 + \frac{1}{2}x + 1$



- 18. Expand $(4 x)^4$ by using the Binomial Theorem.
- 19. Find the solutions to the equation $8x^3 2x^2 43x + 30 = 0$.
- 20. Describe the end behavior of the function $f(x) = 2x^5 x^2 + 75$.