Name _____ Date _____

LESSON 5.6

Practice B

For use with pages 370–378

List the possible rational zeros of the function using the rational zero theorem.

1. $f(x) = x^4 - 6x^3 + 8x^2 - 21$

2. $h(x) = 2x^3 + 7x^2 - 7x + 30$

3. $h(x) = 5x^4 + 12x^3 - 16x^2 + 10$

4. $g(x) = 9x^5 + 3x^3 + 7x - 4$

Find all real zeros of the function.

5. $f(x) = x^3 - 3x^2 - 6x + 8$

6. $g(x) = x^3 + 4x^2 - x - 4$

7. $h(x) = x^3 + 4x^2 + x - 6$

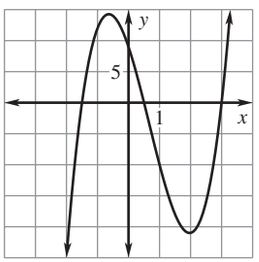
8. $g(x) = x^3 + 5x^2 - x - 5$

9. $f(x) = x^3 + 72 - 5x^2 - 18x$

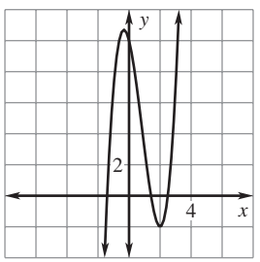
10. $f(x) = x^3 + x^2 - 2x - 2$

Use the graph to shorten the list of possible rational zeros of the function. Then find all real zeros of the function.

11. $f(x) = 4x^3 - 8x^2 - 15x + 9$



12. $f(x) = 2x^3 - 5x^2 - 4x + 10$



Find all real zeros of the function.

13. $g(x) = 2x^3 + 4x^2 - 2x - 4$

14. $f(x) = 2x^3 - 5x^2 - 14x + 8$

15. $h(x) = 8x^3 - 6x^2 - 23x + 6$

16. $g(x) = 2x^4 + x^3 - x^2 - x - 1$

17. $h(x) = 2x^4 + 5x^3 - 5x^2 - 5x + 3$

18. $f(x) = 2x^4 + 3x^3 - 6x^2 - 6x + 4$

19. **Mail** From 1995 to 2003, the amount of mail M (in billions of pieces) handled by the U.S. Postal Service can be modeled by

$$M = 0.05(t^4 - 18t^3 + 89t^2 - 32t + 3680)$$

where t is the number of years since 1995. In which year was there about 204,000,000,000 pieces of mail handled?

a. Write a polynomial equation that can be used to answer the question.

b. List the possible whole-number solutions of the equation in part (a) that are less than or equal to 8.

c. Use synthetic division to determine which of the possible solutions in part (b) is an actual solution. Then answer the question in the problem statement.

d. Use a graphing calculator to graph and identify any additional real solutions of the equation that are reasonable.