

Name \_\_\_\_\_

Date \_\_\_\_\_

**Practice**

For use with pages 370–378

only do problems that  
are circled

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

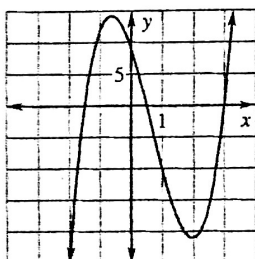
8.  $g(x) = x^3 + 5x^2 - x - 5$

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

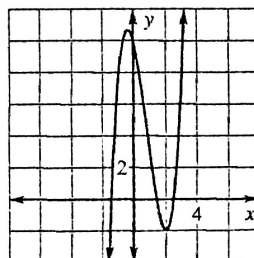
10.  $f(x) = x^3 + x^2 - 2x - 2$

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



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**LESSON**  
**5.6****Practice** *continued*  
*For use with pages 370–378***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?

- Write a polynomial equation that can be used to answer the question.
- List the possible whole-number solutions of the equation in part (a) that are less than or equal to 8.
- 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.
- Use a graphing calculator to graph and identify any additional real solutions of the equation that are reasonable.