

**6-8 Practice****Rational Zero Theorem****List all of the possible rational zeros of each function.**

1.  $h(x) = x^3 - 5x^2 + 2x + 12$

2.  $s(x) = x^4 - 8x^3 + 7x - 14$

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

4.  $p(x) = 3x^2 + x + 7$

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

6.  $q(x) = 6x^5 + x^3 - 3$

**Find all of the rational zeros of each function.**

7.  $q(x) = x^3 + 3x^2 - 6x - 8$

8.  $v(x) = x^3 - 9x^2 + 27x - 27$

9.  $c(x) = x^3 - x^2 - 8x + 12$

10.  $f(x) = x^4 - 49x^2$

11.  $h(x) = x^3 - 7x^2 + 17x - 15$

12.  $b(x) = x^3 + 6x + 20$

13.  $f(x) = x^3 - 6x^2 + 4x - 24$

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

15.  $h(x) = 2x^3 - 7x^2 - 21x + 54$

16.  $z(x) = x^4 - 3x^3 + 5x^2 - 27x - 36$

17.  $d(x) = x^4 + x^3 + 16$

18.  $n(x) = x^4 - 2x^3 - 3$

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

20.  $q(x) = 6x^4 + -9x^3 + 40x^2 + 7x - 12$

**Find all of the zeros of each function.**

21.  $f(x) = 2x^4 + 7x^3 - 2x^2 - 19x - 12$

22.  $q(x) = x^4 - 4x^3 + x^2 + 16x - 20$

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

24.  $g(x) = x^6 - 1$

**25. TRAVEL** The height of a box that Joan is shipping is 3 inches less than the width of the box. The length is 2 inches more than twice the width. The volume of the box is  $1540 \text{ in}^3$ . What are the dimensions of the box?

**26. GEOMETRY** The height of a square pyramid is 3 meters shorter than the side of its base. If the volume of the pyramid is  $432 \text{ m}^3$ , how tall is it? Use the formula  $V = \frac{1}{3} Bh$ .