Trig 4.4

Identify possible rational roots of polynomial equations
Determine the number of positive and negative real roots

Quiz 4.3-4.4 Tues.

rational root theorem

DeCarte's rule of signs: positive real roots negative real roots

Double root

whiteboards

MID-CHAPTER QUIZ

7. Determine the binomial factors of $x^3 - 2x^2 - 5x + 6$. (Lesson 4-3)

8. Next the possible rational roots of
$$x^3 + 6x^2 + 10x + 3 = 0$$
. Then determine the rational roots. (Lesson 4-4)

±1 ±3

$$X = -3$$

 $X = \frac{3 \pm \sqrt{5}}{2}$
 $X = \frac{3 \pm \sqrt{5}}{2}$
 $-3 \pm \sqrt{5}$
 $-3 \pm \sqrt{5}$

$$x = -3 \pm \sqrt{9-4}$$

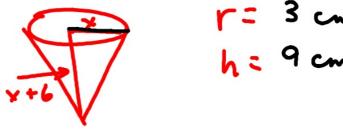
= $-3 \pm \sqrt{8}$

- ← C=3, [-] 1 4 3 -4.
- 1 -3 0 -4 0 1 -1 -3 0 4 1 -1 -3 0 4
 - (X+2) (x-1) X=-2 X=1

9. Find the number of possible positive zeros and the number of possible negative zeros for $F(x) = x^4 + 4x^3 + 3x^2 - 4x - 4$. Then determine the rational zeros. (Lesson 4-4)



10. Manufacturing The Universal Paper Product Company makes cone-shaped drinking cups. The height of each cup is 6 centimeters more than the radius. If the volume of each cup is 27π cubic centimeters, find the dimensions of the cup. (Lesson 4-4)



$$V = 27\pi = \frac{1}{3} B.h$$

$$= \frac{1}{3} (\pi r^{2}) h$$

$$X = \frac{1}{3} (\pi r^{2}$$

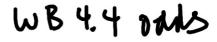
Possible positive rational roots: f(x)

List the possible rational roots of each equation. Then determine the rational

10.
$$x^3 + 2x^2 - 5x - 6 = 0$$

2, $\frac{3}{2}$, -6

11.
$$x^3 - 2x^2 + x + 18 = 0$$





Find the number of possible positive real zeros and the number of possible negative real zeros for each function. Then determine the rational zeros.

17.
$$f(x) = x^3 - 7x - 6$$

18.
$$f(x) = x^3 - 2x^2 - 8x$$