

A) A biconditional:

1) If $f(c)=0$, then $x-c$ is a factor of $f(x)$

2) If $x-c$ is a factor of $f(x)$ then $f(c) = 0$

Use: If you find a zero, can be divided out to create a simpler polynomial for further study.

B) The degree of the polynomials tells you the maximum number of real zeros.

Use: You know when to stop.

C) IF A POLYNOMIAL FUNCTION HAS INTEGER COEFFICIENTS

then make two lists:

1) factor the constant (call these p's)

2) factor the leading coefficient (call these q's)

3) make all the +/- fractions you can putting the p's/q's

ALL YOU REAL RATIONAL ZEROS ARE IN THIS LIST.

Use: It gives you all the possibilities.

- A useful list

- A guide on window size

D) IF THE LEADING COEFFICIENT OF A POLYNOMIAL IS 1

then all the zeros are between

$-M$ to $+M$ where M is

The smaller of

o The sum of the absolute value of the coefficients

and

o $1 +$ the coefficient with the biggest absolute value

Use: You know how big a window to set on the calculator.

E) End behavior and turning points are still useful.