

# Finding Integral Zeros

Fundamental Theorem of Algebra: A polynomial function  $P(x)$  of degree  $n$  has exactly  $n$  complex zeros.

Multiple Zeros of a Polynomial: If a polynomial  $P(x)$  has  $x - r$  occurring as a factor exactly  $k$  times, then  $r$  is a **zero of multiplicity  $k$**  of the polynomial function  $y = P(x)$ .

Finding Integral Zeros of Polynomial Functions: Let  $P(x)$  be a polynomial function in  $x$  with integral coefficients. Then the only possible zeros of  $P(x)$  are the divisors of the constant term.