Polynomials

Recall Quadratic Format:

Introduction

> Format:

degree : =

number sets:

_____ is a _____ integer

coefficients _____ are _____

Polynomial Examples

$p(x) =$

$p(x) =$

$p(x) =$

$q(x) =$

Graph Behavior/Domain

Polynomials are _____ and _____ therefore domain is _____.

End Behavior

Look at polynomial's _____ to determine what happens to graph when

the _____ approach _____ and _____ infinity.

♦ _____ is _____ or _____

♦ _____ is _____ or _____

Four Cases:

a_n	a_n	a_n	a_n
degree:	degree:	degree:	degree:

ex. Sketch the *end behavior* of _____.

Zeros/Roots

represent the _____ of the _____

ex. Find all *zeros* of _____.

ex. Find all *roots* of _____.

multiplicity is the _____ each unique _____ occurs
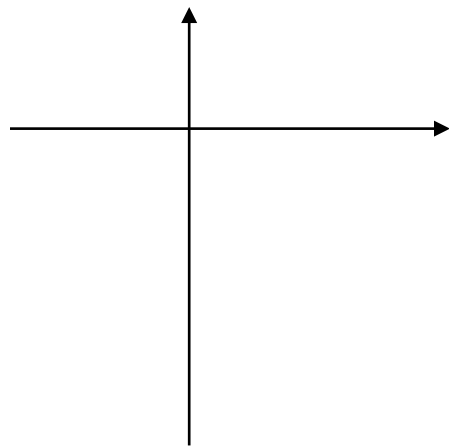
Do: Find all zeros and their _____ for _____.

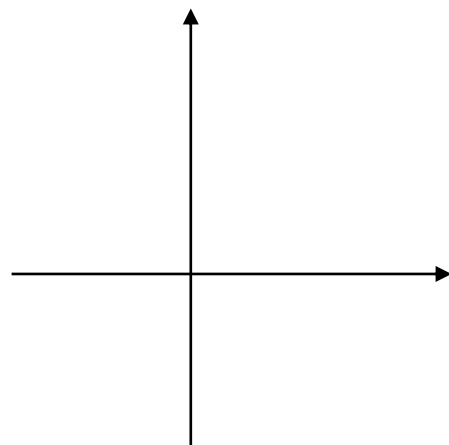ex. Find all roots and their _____ for _____.

How Multiplicity Affects Graph of Polynomial

If root's multiplicity is _____, graph _____ x-axis at the root.

If root's multiplicity is _____, graph _____ x-axis at the root.

ex. Sketch the graph of _____.

ex. Sketch the graph of _____.

Find Polynomial Given its Roots

ex. Find roots of _____.

Note that, from this _____, it's unclear what _____.

ex. Determine the _____ with a _____ and roots of _____.

   Use *k* as a placeholder for _____ factor.

Follow up Question: find the _____ of _____ using _____.

Express the resulting _____ in _____ form.