Integrated Math 3:  NOTES                          Name_____

## Predicting the Graph of a Polynomial

Date_____ Period_____

1) DEFINITIONS

Polynomial:

_____

_____

Degree of a Polynomial:

_____

_____

Standard Form:  _____

Y-Intercept from Standard Form:

_____

Factored Form:  _____

Y-Intercept from Factored Form:

_____

_____

Multiplicity: _____

Even Multiplicity:

_____

Odd Multiplicity:

_____

2) Let's predict the graph of
$f(x) = x(x + 1)^2(x - 3)$

What is its degree?  _____

What are the x-intercepts?

_____

Draw vertical lines at the x-intercepts.
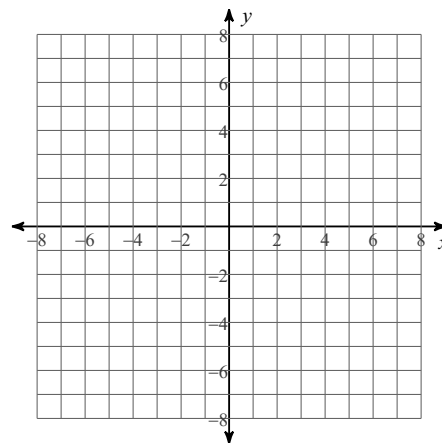
Put a light dot on the y-intercept.

Are there any x-intercepts with a multiplicity of 2 or more? _____

Is this an even or odd multiplicity? _____

Draw a dark dot on the x-intercept with a multiplicity of 2 and write "bounce" next to it.

How should the left and right sides of this graph behave? (up? down?)

Now, let's try to draw this!

3) Let's predict the graph of
$f(x) = (x - 2)^2(x + 3)$

What is its degree? _____

What are the x-intercepts?

_____

Draw vertical lines at the x-intercepts.
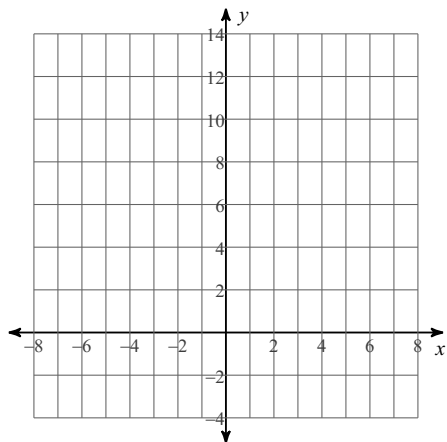
Put a light dot on the y-intercept.

Are there any x-intercepts with a
multiplicity of 2 or more? _____

Is this an even or odd multiplicity? _____

Draw a dark dot on the x-intercept with a
multiplicity of 2 and write "bounce" next
to it.

How should the left and right sides of this
graph behave? (up? down?)

Now, let's try to draw this!



4) Let's predict the graph of
$f(x) = (x + 2)^3(x - 1)$

What is its degree? _____

What are the x-intercepts?

_____

Draw vertical lines at the x-intercepts.

Put a light dot on the y-intercept.

Are there any x-intercepts with a
multiplicity of 2 or more? _____

Is this an even or odd multiplicity? _____

Draw a dark dot on the x-intercept with a
multiplicity of 3 and write "bend" next to
it.

How should the left and right sides of this
graph behave? (up? down?)

Now, let's try to draw this!