

Predicting the Graph of a Polynomial Practice

1) Let's predict the graph of

$$f(x) = (x + 2)^2(x - 2)$$

What is its degree? _____

What are the x-intercepts? Mark them on graph.

Put a dot on the y-intercept.

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

Is this an even or odd multiplicity? _____

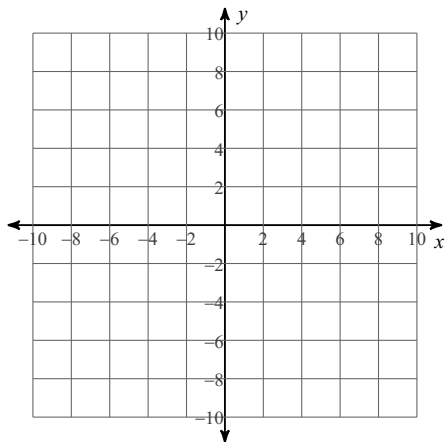
Because it's (even/odd), it will have a (bounce/bend) at that intercept.

Draw a dark dot on the x-intercept with a multiplicity of 2 or more and write (bounce/bend) next to it.

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

REMINDER: Even degree functions have the same end behaviors. Odd degree functions have opposite end behaviors.

Now, let's try to draw this!



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

What is its degree? _____

What are the x-intercepts? Mark them on graph.

Put a dot on the y-intercept.

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

Is this an even or odd multiplicity? _____

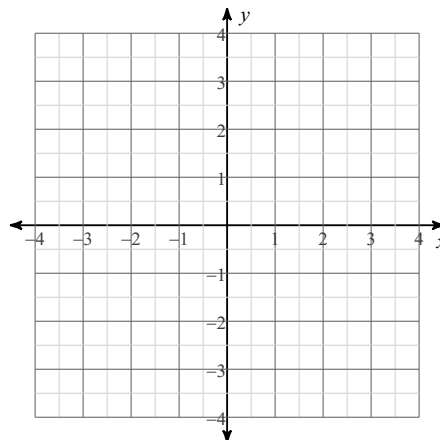
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How should the left and right sides of this graph behave? (up? down?)

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Now, let's try to draw this!



3) Let's predict the graph of

$$f(x) = (x - 1)(x + 2)^3$$

What is its degree? _____

What are the x-intercepts? Mark them on graph.

Put a dot on the y-intercept.

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

Is this an even or odd multiplicity? _____

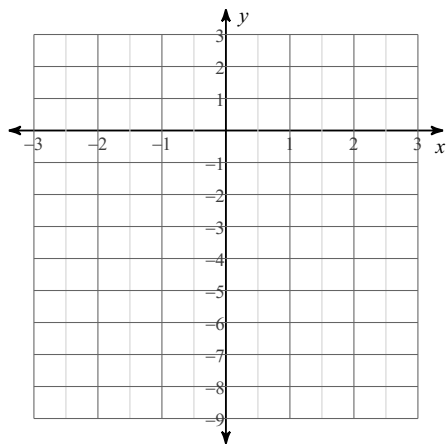
Because it's (even/odd), it will have a (bounce/bend) at that intercept.

Draw a dark dot on the x-intercept with a multiplicity of 2 or more and write (bounce/bend) next to it.

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

REMINDER: Even degree functions have the same end behaviors. Odd degree functions have opposite end behaviors.

Now, let's try to draw this!



4) Let's predict the graph of

$$f(x) = (x - 2)(x + 1)^2$$

What is its degree? _____

What are the x-intercepts? Mark them on graph.

Put a dot on the y-intercept.

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

Is this an even or odd multiplicity? _____

Because it's (even/odd), it will have a (bounce/bend) at that intercept.

Draw a dark dot on the x-intercept with a multiplicity of 2 or more and write (bounce/bend) next to it.

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

REMINDER: Even degree functions have the same end behaviors. Odd degree functions have opposite end behaviors.

Now, let's try to draw this!

