Suggested Answers: Graphing a polynomial function given the key features

The suggested answers to the “Practice Activity: Graphing a polynomial function given the key features”, are included below. Please check your work to ensure understanding.

Question 1:

Assume that a graph has a degree 4, a positive leading coefficient and x-interceptsat $-4,\ -2,\ 0\ ,\ 3$. What will the end behaviours of this graph be?

Suggested Answer:

Start **high**
End **high**

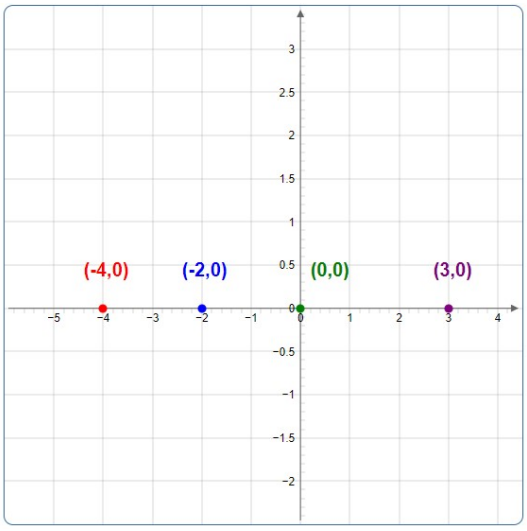
Since this is an even degree function with a positive leading coefficient, the graph will start high and end high

Question 2:

Sketch the function based on the end behaviours and the x-intercepts by completing the following:

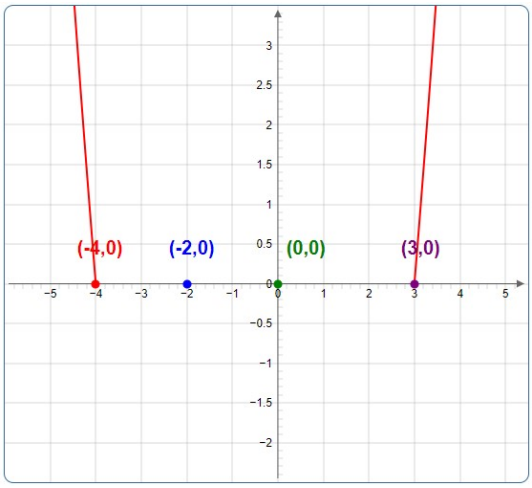
a) Plot the x-intercepts on a graph (Step 1)

Suggested Answer:



b) Draw in the end behaviours (Step 2)

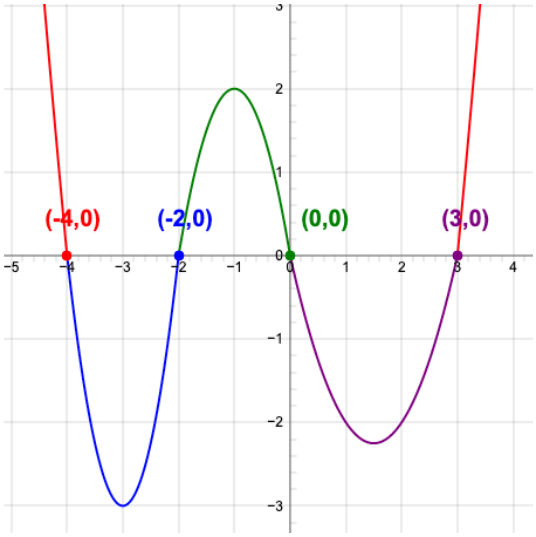
Suggested Answer:



Remember that since it is an even degree function (i.e. degree 4) with a positive leading coefficient, the graph will start and end high

c) Connect the other x-intercepts by alternative curves of ∩ and ∪ shapes (Step 3)

Suggested Answer:



Your graph may look a bit different than this one. The peaks may be lower or taller and the valleys may lower or taller. As long as the general shape is the same, it is a reasonable graph for the given key features.