

MA 109: October 5

Quadratic Functions, and Polynomials: Roots, Multiplicity, and Equations

Start of Class

Instructor Information

Name:

Email:

Office Hours:

Warm-up Questions

Notes

Quadratic Functions

Example: Suppose $f(x)=5(x-2)(x+7)$. What are the roots of $f(x)$?

Example: Write the equation of the quadratic function with roots at $x=3,-2$ and y -intercept at $y=18$.

Example: Write the equation of the quadratic function with a root at $x=7$ and goes through the point $(3,-2)$.

Polynomials

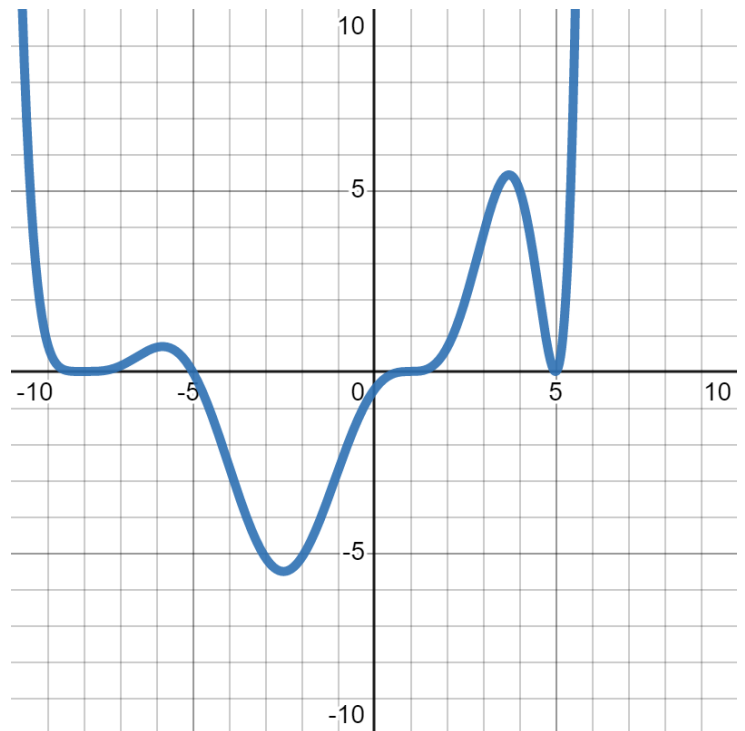
Example: Complete the following table to determine all of the roots and their multiplicities for the function

$$p(x) = 6(x - 3)^7(x + 2)$$

Root	Multiplicity
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Example: Complete the following table to determine all of the roots and their multiplicities for the polynomial function in the graph below.

Root	Multiplicity
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Summary: Roots and Multiplicity

From the Equation	From the Graph

Example: Write the equation of the degree 6 polynomial with roots of multiplicity 2 at -2 and 5 , and a root of multiplicity 1 at 0 , and goes through the point $(3, -150)$.

End of Class

Write a summary of what you learned today:

What questions do you have about the material from today?

What do you need to do between now and the next class meeting?