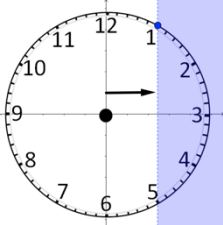
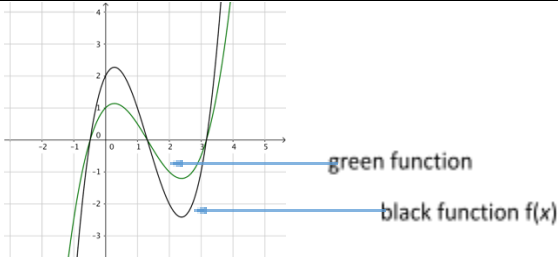


Major Learning Targets for This Course

Polynomial Functions		
Students will perform arithmetic, solve equations, and graph with polynomial functions (<i>polynomials are numbers represented with many terms, like $3x^2 + 4x - 1$.</i>)		
"I can add, subtract, multiply and divide polynomials."	"I can solve a polynomial equation and understand if my answer makes sense."	"I can graph a polynomial equation, and explain the key features of the graph."
<p>Example Task: A company packs its popcorn in cardboard boxes with square bottoms. In a box that holds 216 in³ of popcorn, what is the side length of the box that uses the least amount of cardboard?</p> <ol style="list-style-type: none"> 1) Draw and label the box. 2) Write a function that models the surface area of the box as a function of the height of the box. 3) Create a table that shows values of the function. 4) Based on the table, make an estimate of the side length of the box that uses the least cardboard. 5) By testing values near your estimate, improve your estimate. 		

Trigonometry		
Students will use the unit circle and trigonometric functions to find angles and distances, and to model real-world situations.		
"I can find the sine, cosine, and tangent of angles larger than 90°."	"I can name angles by their degree and radian measures."	"I can graph a sine function and model sound, radio, or light waves with it."
	<p>Example Task: A student is trying to sketch a large picture of a clock face for an art project. She has drawn a circle that is one foot in radius, and she has a tool to measure distance, but she doesn't have a tool to measure angles. How far to the right of the center of the clock should she draw the mark for one o'clock? Explain your reasoning using what you know about trigonometry.</p>	

Transformations of Functions		
Students will understand how changing the numbers in an equation changes the graph of the equation.		
"I can change numbers in an equation to shift, stretch, or reflect the graph of that equation."	"I can compare two graphs and explain how the equation for one might be changed into the equation for the other."	"I can use what I know about changing equations to model a real situation, using any function type I've learned about."
<p>Example Task: The black function is $f(x)$. Write an equation, related to $f(x)$, that might describe the green function. Explain why your equation would cause the changes in the graph from the black function to the green one.</p>		

Expected Behaviors in Math Class

Students will...

- Consider available tools to help them solve problems and deepen understanding (including hands-on tools and technology).
- Look for patterns and connections.
- Explain their thinking and their process for solving a problem.
- Make predictions and estimations.
- Decide if an answer is reasonable.
- Justify conclusions.
- Communicate ideas clearly verbally and in writing, using math vocabulary when appropriate.
- Apply mathematics to solve problems in everyday life.

How Can I Support My Student in This Course?



Access Google Classroom Regularly (if Applicable)

- ⇒ Look at the Stream for daily announcements and a weekly schedule.
- ⇒ View the Classwork for assignment information and support.



Encourage Multiple Strategies and Representations of the Problem

- ⇒ Ask your student to solve the problem in different ways.
- ⇒ Encourage the use of different representations (e.g., symbols, words, or pictures/visuals), and have them make connections between representations.



Ask Questions & Encourage Your Student to Ask Questions

- ⇒ When your student is stuck, don't simply tell them the correct answer. Ask questions like:
 - "What is the question in the problem/task?"
 - "What do you understand/know from the task?"
 - "How do you know?" Listen while your student explains their mathematical reasoning and ask, "Does your answer make sense?" based on the context of the problem or task.
- ⇒ Encourage your student to write down questions to bring to their teacher or peer the next day.



Value Mistakes

- ⇒ Students are learning when they are making mistakes; create an environment where your student feels comfortable making a mistake and learning from it.



Acknowledge Effort over Answers and Speed

- ⇒ Celebrate how hard your student is working, whether their answer is correct or not.
- ⇒ When your student is stuck, remind them that learning can be challenging, and if they continue to practice and work hard, they will improve.