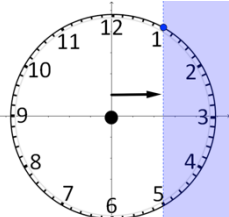
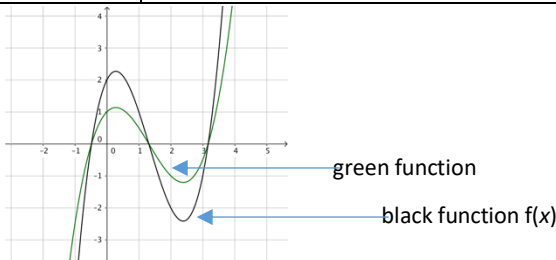


## Major Learning Targets for This Course

Polynomial Functions		
Students will perform arithmetic, solve equations, and graph with polynomial functions ( <i>polynomials are numbers represented with many terms, like <math>3x^2 + 4x - 1</math>.</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><b>Example Task:</b> A company packs its popcorn in cardboard boxes with square bottoms. In a box that holds <math>216 \text{ in}^3</math> of popcorn, what is the side length of the box that uses the least amount of cardboard?</p> <ol style="list-style-type: none"> <li>1) Draw and label the box.</li> <li>2) Write a function that models the surface area of the box as a function of the height of the box.</li> <li>3) Create a table that shows values of the function.</li> <li>4) Based on the table, make an estimate of the side length of the box that uses the least cardboard.</li> <li>5) By testing values near your estimate, improve your estimate.</li> </ol>		

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 $90^\circ$ ."	"I can name angles by their degree <i>and</i> radian measures."	"I can graph a sine function and model sound, radio, or light waves with it."
	<p><b>Example Task:</b> 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><b>Example Task:</b> The black function is <math>f(x)</math>. Write an equation, related to <math>f(x)</math>, 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...

- Check into Google Classroom daily for announcements and to receive/turn in assignments.
- Attend live/recorded Zoom learning and support sessions, with the camera on when feasible.
- Consider available tools to help them solve problems (including hands-on tools and technology).
- Use technology and various applications to explore and deepen understanding.
- Explain their thinking and their process to solving a problem.
- Communicate ideas clearly verbally and in writing, using math vocabulary when appropriate.
- Decide if their answer is reasonable.
- Use examples and counterexamples to justify a conclusion.
- Apply mathematics to solve problems in everyday life.

## How Can I Support My Student in This Course?



### Access Google Classroom Daily

- ⇒ Look at the Stream for daily announcements and a weekly schedule.
- ⇒ View the Classwork for assignment information and support.
- ⇒ Accept the Guardian Access request sent to your email address for regular updates on your student's progress.



### Encourage Multiple Representations of the Problem

- ⇒ Ask your student to solve the problem in different ways, and to make connections between the different representations.
- ⇒ Ask your student to create visual representations help understand the concepts.



### Ask Questions

- ⇒ When your student is stuck, ask him/her questions like: "What is the question in the problem/task?" or "What do you understand/know from the task?" and "How do you know?" Listen while your student explains his/her mathematical reasoning and ask "Does your answer make sense?" based on the context of the problem or task.
- ⇒ Guide your student to participate in small group discussions via Zoom to get questions answered or to send a private message to his/her teacher using Google Classroom.



### 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.



### Don't Simply Tell Them the Right Answer

- ⇒ Once students are aware that their answer is right, they are more likely to stop thinking about the math. Instead of telling students the right answer, ask them a question or have them draw a picture.



### Praise Effort

- ⇒ When your student gets a right answer, acknowledge how hard they must have worked and practiced.
- ⇒ When your student is stuck, acknowledge that sometimes math is challenging and that if they continue to practice and work hard, they will improve.

For more information, visit [scusd.edu/math](https://scusd.edu/math) or contact [Mikila-Fetzer@scusd.edu](mailto:Mikila-Fetzer@scusd.edu), Math Coordinator