Unit 7, Lesson 17

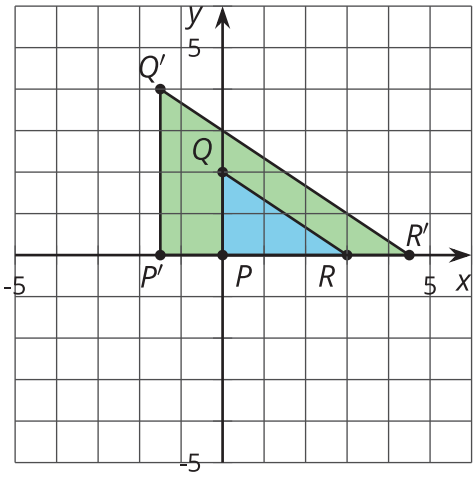
Parameters and Graphs

Let's talk about moving graphs around the plane.

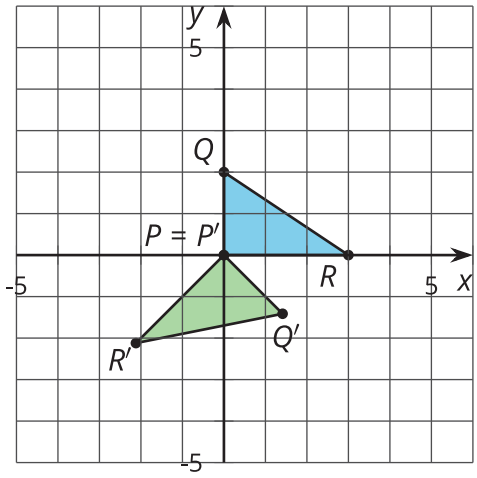
17.1 Which Three Go Together: Triangles

Each figure shows triangle PQR, and its image after a transformation, $P'Q'R'$. Which three go together? Why do they go together?

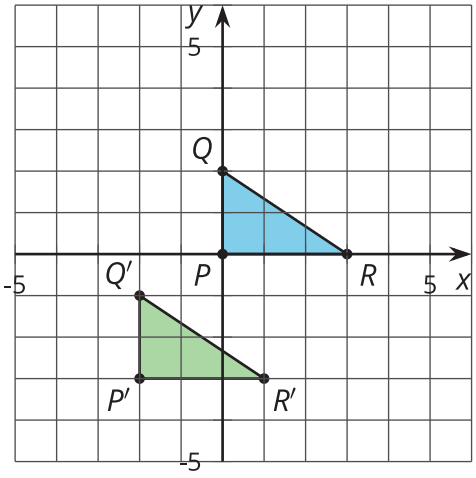
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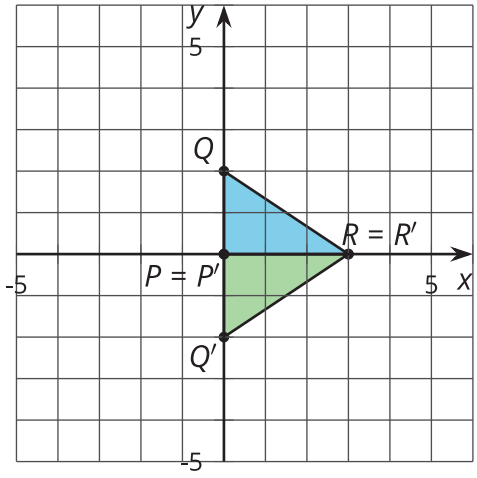
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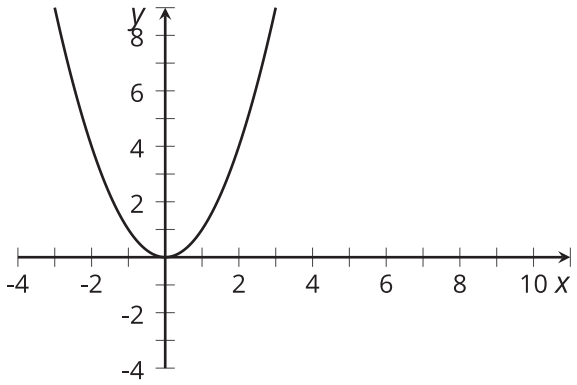
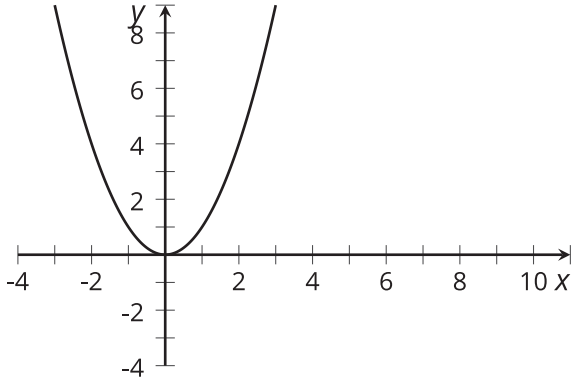
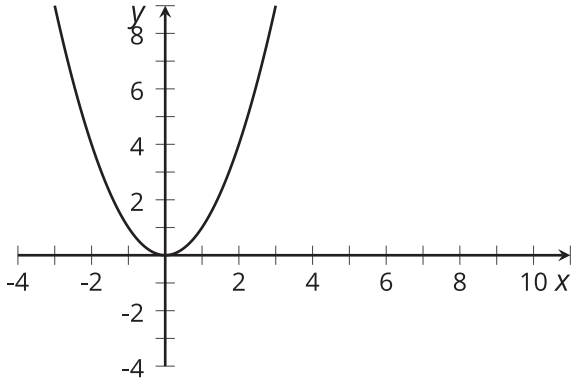
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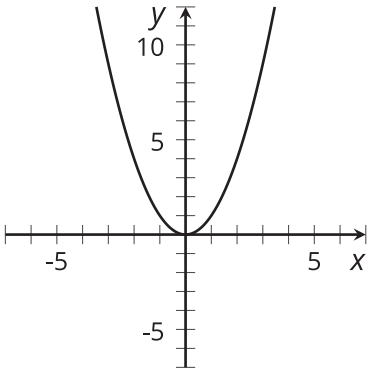
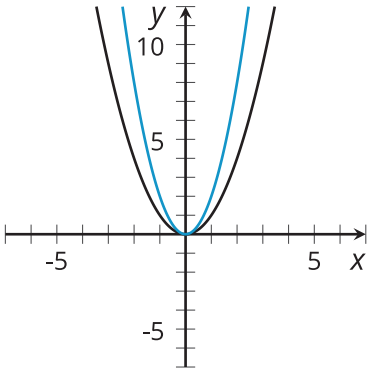
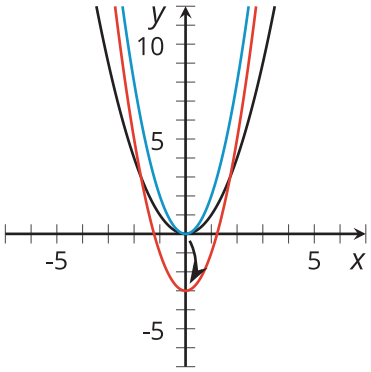
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17.2 Describe the Change

1. Use graphing technology to graph each equation. Describe how each graph changes from the graph before and draw a sketch of the change.

equation	description of change	sketch of graph
$y = x^2$	original graph	
$y = (x - 5)^2$		
$y = (x - 5)^2 + 4$		

2. Describe the change in the given sketch and write an equation that you think would generate that change.

equation	description of change	sketch of graph
$y = x^2$	original graph	
		
		

3. How would the graph of $y = -2x^2 - 3$ compare to the graph of $y = 2x^2 - 3$?

17.3 Select a Function

Let's call the graph of $y = x^2$ "the original graph."

Select the function that will affect the original graph in the way described.

1. Shift the vertex of the graph left 1 unit.
2. Shift the vertex of the graph up 1 unit.
3. Shift the vertex of the graph right 1 unit and up 1 unit.
4. Make the original graph narrower.
5. Make the original graph narrower, and shift the vertex 1 unit to the right.

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