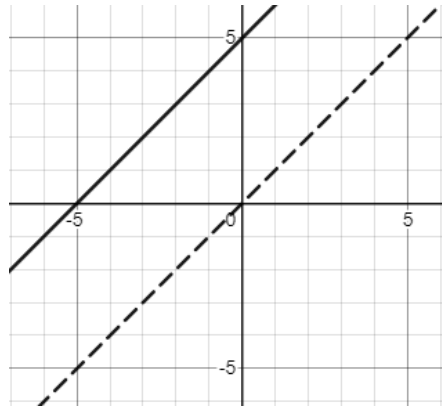


## Unit 3. Section 3. Practice.

**Exercise 1. Is there only one way to transform a graph into another graph?**

A) The graph on the left shows the parent function of the linear family,  $p(x) = x$ , using a dashed line.

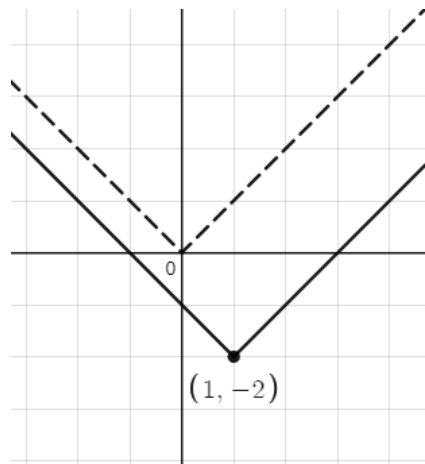
What transformation(s) can be applied to the parent function to obtain the linear function represented by a solid line? (Select all that apply.)

- left 5 units
- right 5 units
- up 5 units
- down 5 units

B) What is the equation of the solid line? (To answer you may use the equation of the parent function and the change in equation for one of the transformations you selected.)

C) Choose a point on the solid graph and write down its coordinates.

D) Does the point chosen in part C satisfy the equation you wrote in part B?

**Exercise 2. Does the order of transformations matter?**

A) The graph on the left shows the parent function of the absolute value family,  $p(x) = |x|$ , using a dashed line.

What transformations can be applied to the parent function to obtain the function represented by a solid line? (Select two.)

right 1 unit, up 2

up 2 units, right 1

right 1 unit, down 2

down 2 units, right 1

B) Apply the two transformations in your first selection.

Equation after the first transformation:

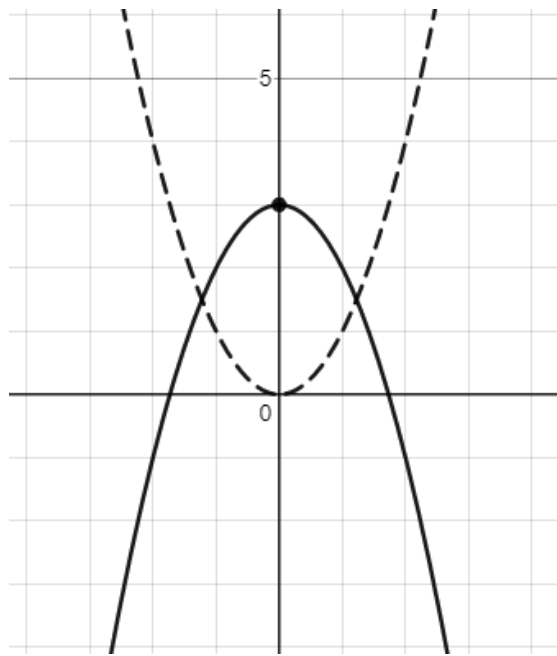
Equation after the second transformation:

C) Apply the two transformations in your second selection.

Equation after the first transformation:

Equation after the second transformation:

D) Are the final equations in part B and part C the same? Is their graph the same as the one depicted by the solid line graph?

**Exercise 3. Does the order of transformations matter?**

A) The graph on the left shows the parent function of the quadratic family,  $p(x) = x^2$ , using a dashed line.

What transformations can be applied to the parent function to obtain the function represented by a solid line? (Select two.)

up 3, reflection over the x-axis

reflection over the x-axis, up 3

down 3, reflection over the x-axis

reflection over the x-axis, down 3

B) Apply the two transformations in your first selection.

Equation after the first transformation:

Equation after the second transformation:

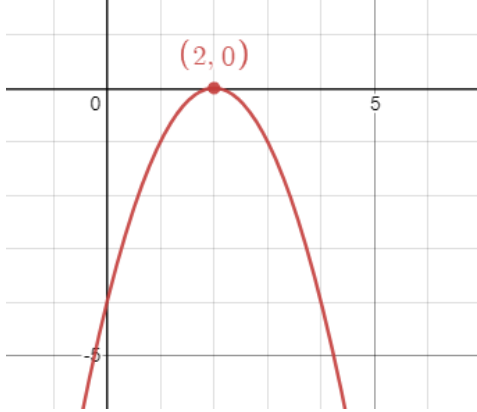
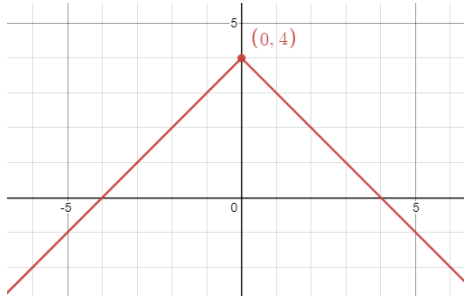
C) Reverse the order of the two transformations in your first selection.

Equation after the first transformation (the second from part B):

Equation after the second transformation (the first from part B):

D) Are the final equations in part B and part C the same? Is their graph the same as the one depicted by the solid line graph?

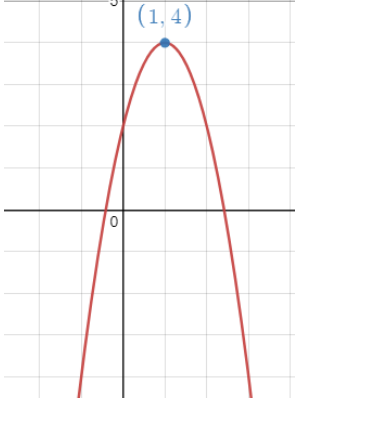
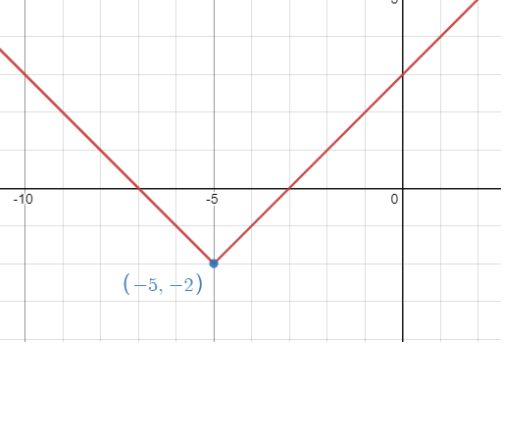
Homework

<p><b>Exercise 1</b></p>		
<p>Parent Function</p>		
<p>First Transformation (description)</p>		
<p>Second Transformation (description)</p>		

Exercise 2. Write the equation of the following transformed functions,

A) Linear function translated 3 units up.

B) Square function translated 5 units left and 8 units down.

Exercise 3	$-2(x - 1)^2 + 4$	$ -x - 5  - 2$
Graph		
Domain		
Range		