

Example 3 Write the equation given a description

A quadratic function that has been reflected in the x-axis and translated left 2 units and up 9 units.

Transformations

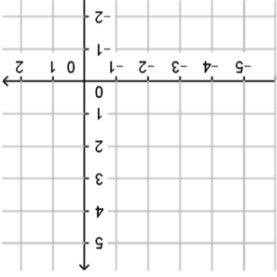
Translation:

Reflection:

Dilation:

Rigid:

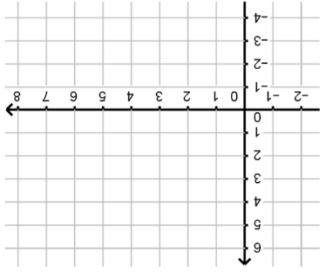
Non-rigid:



Example 4 Sketch a graph using transformations
Use transformations to sketch $3f(x+2)-1$ when $f(x) = x^2$

***Must follow the order of operations (mult/div before add/sub)*

Anchor	Multiply	by	parent graph
points of the	Multiply	by	
either add	Multiply	x-value	
or subtract	Multiply	x-value	
either add	Multiply	y-value	
or subtract	Multiply	y-value	



Use transformations to sketch $-f(x-3)+2$ when $f(x) = \sqrt{x}$

Anchor	Multiply	by	parent graph
points of the	Multiply	by	
either add	Multiply	x-value	
or subtract	Multiply	x-value	
either add	Multiply	y-value	
or subtract	Multiply	y-value	

Example 1 Identify transformations from the equation

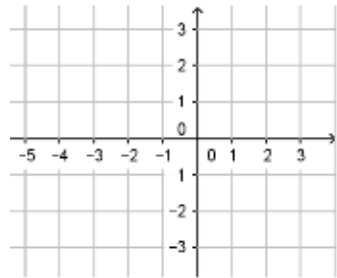
[A] $f(x) = 7 + \frac{1}{2}(x+1)^2 - 10$

Standard form:

Type of function:

Rigid:

Non-rigid:



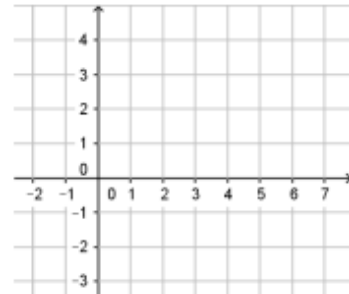
[B] $f(x) = \frac{2}{x-3} + 1$

Standard form:

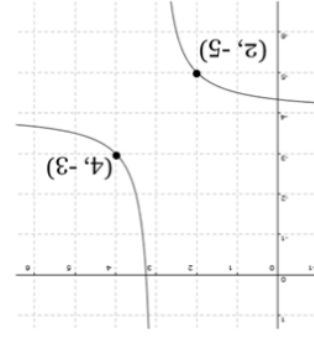
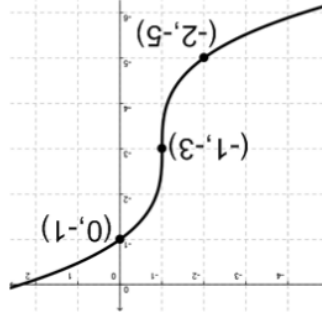
Type of function:

Rigid:

Non-rigid:



Example 2 Write the equation for the graph.



Type of function:
Rigid:
Non-rigid:
Equation:

