

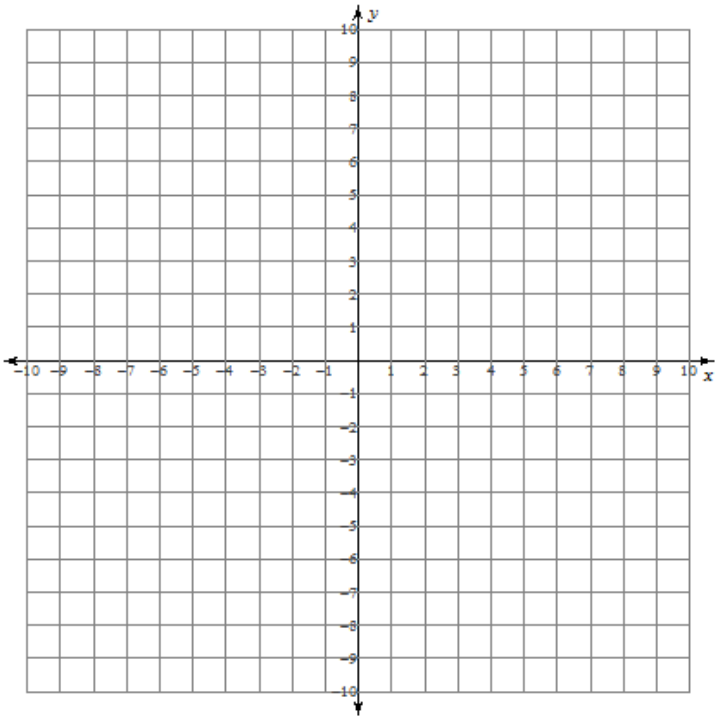
# Function Toolkit #1

Use the Function Toolkit to sketch a graph of each of the following functions on the coordinate axes provided. Show all work, calculations, and tables where appropriate. State the domain, range, vertex, x- and y-intercepts when requested.

1.  $y = 3|x - 2| - 4$

Mapping Rule: $(x, y) \rightarrow$			
Base Function		New Function	

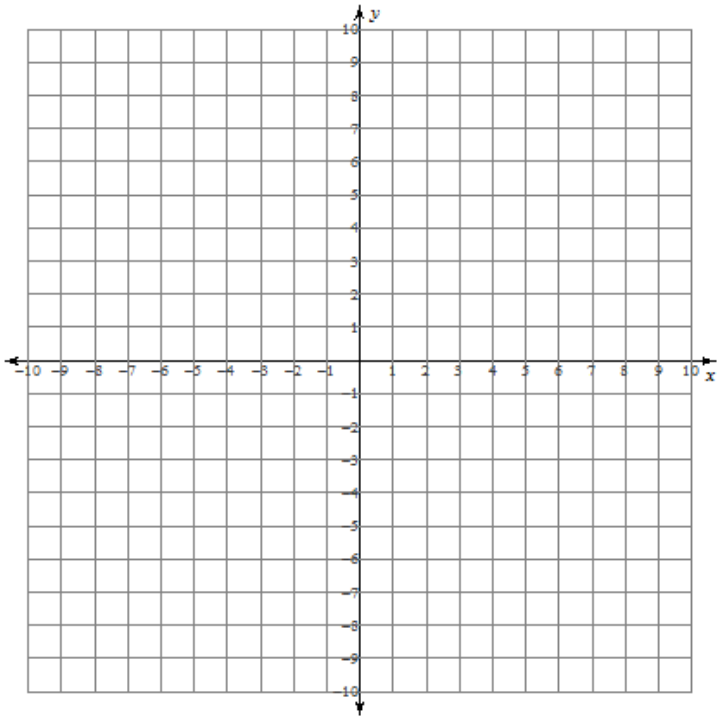
x-int	y-int	Domain	Range



2.  $y = e^{x+2} - 6$

Mapping Rule: $(x, y) \rightarrow$			
Base Function		New Function	

x-int	y-int	Domain	Range



3.  $y = -3\sqrt{x+6} + 5$

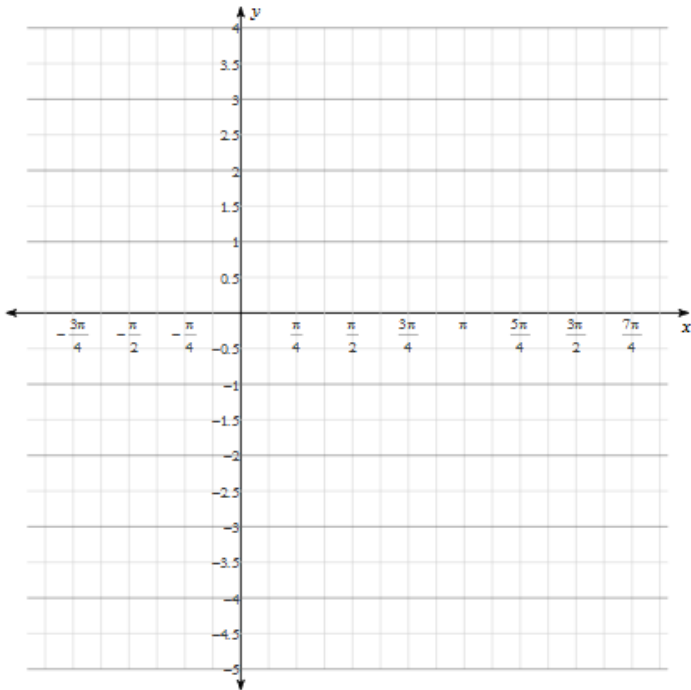
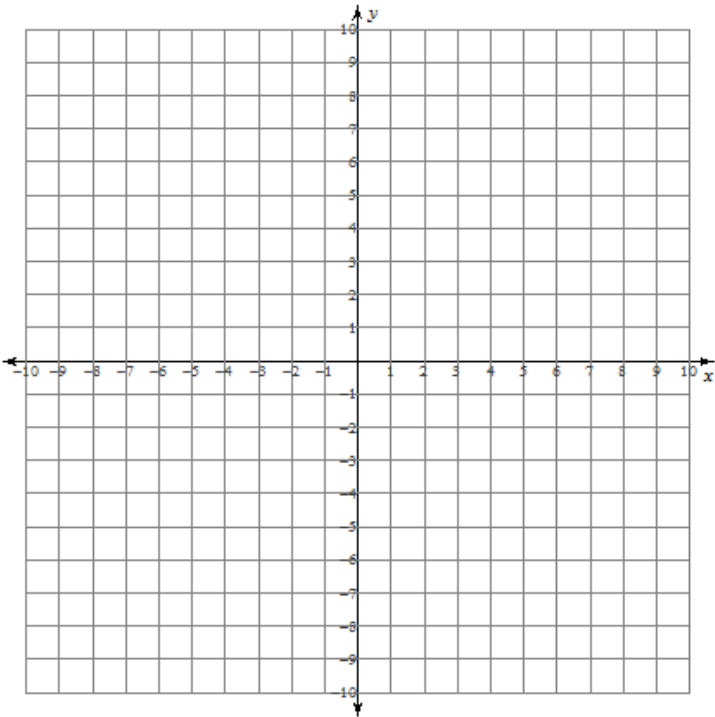
Mapping Rule: $(x,y) \rightarrow$				
Base Function			New Function	

x-int	y-int	Domain	Range

4.  $y = 2\sin\left(\frac{4}{3}\left(x - \frac{\pi}{4}\right)\right) - 1$

Mapping Rule: $(x,y) \rightarrow$				
Base Function			New Function	

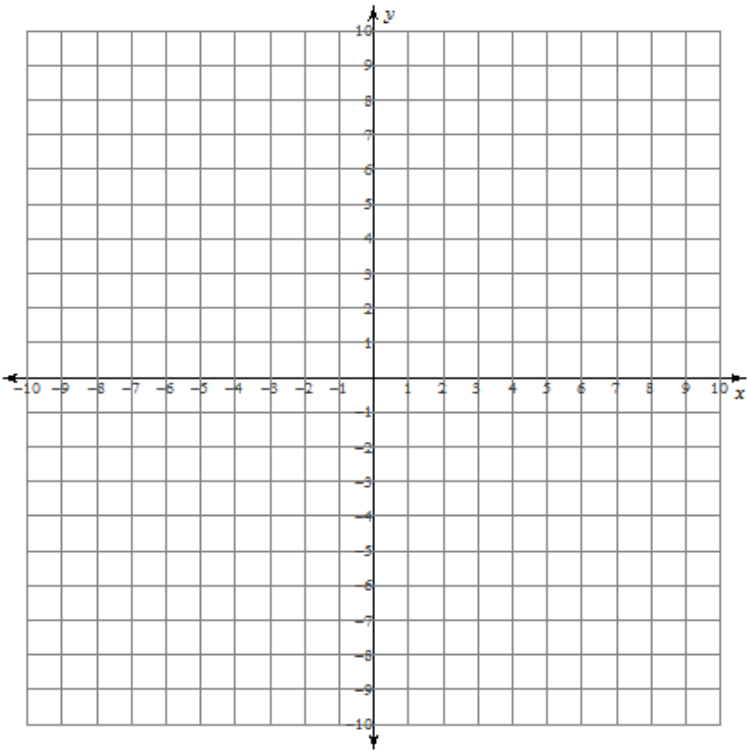
x-int	y-int	Domain	Range



5.  $y = -x^3 - x^2 + 5x - 3$

Factor to find all the x-intercepts.

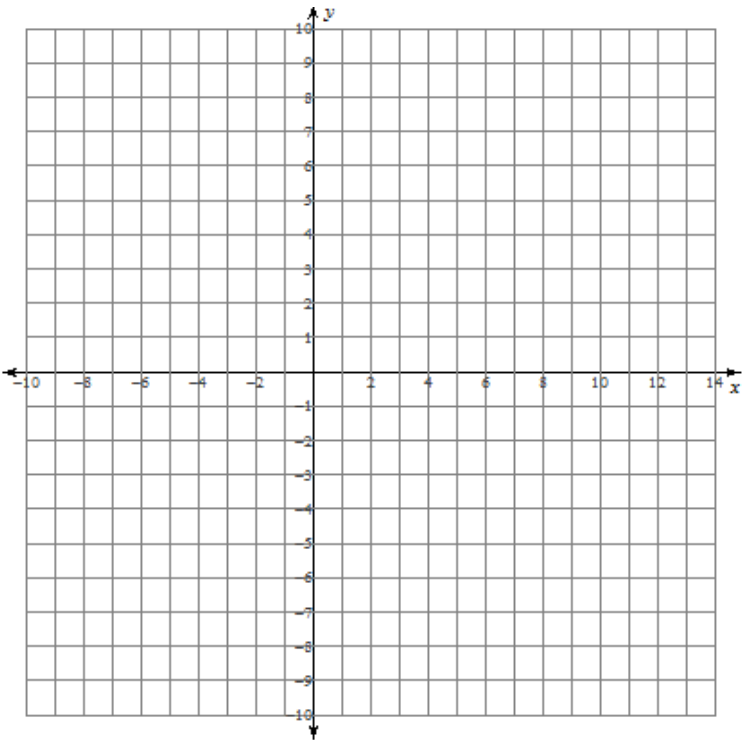
x-int	y-int	Domain	Range
Other points:			



6.  $y = \log_2(x - 3) - 4$

Mapping Rule: $(x, y) \rightarrow$				
Base Function			New Function	

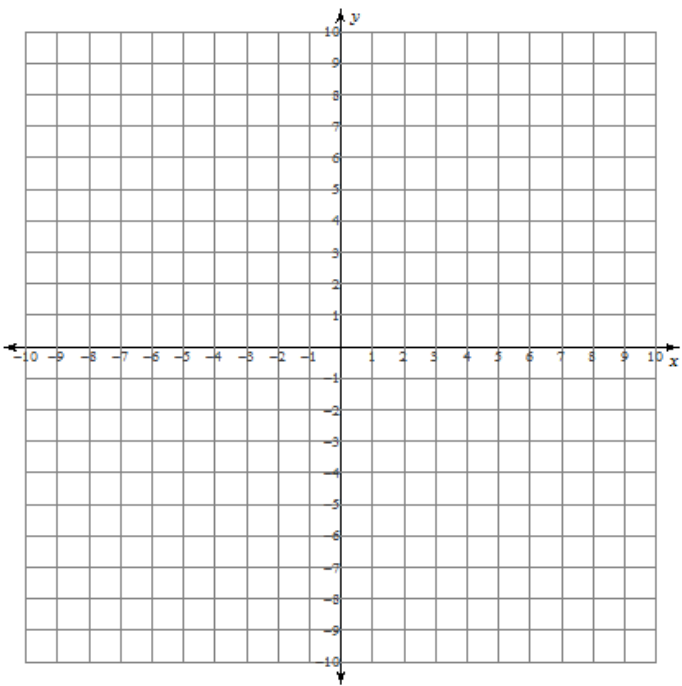
x-int	y-int	Domain	Range
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7.  $y = \frac{2x^2 + 2x - 4}{x^2 - x - 12}$

Factored form:

x-int	y-int	Domain	Range -----
Other points:			



8.  $y = \frac{1}{(x+3)^2} - 2$

Mapping Rule: $(x, y) \rightarrow$			
Base Function		New Function	

x-int	y-int	Domain	Range
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