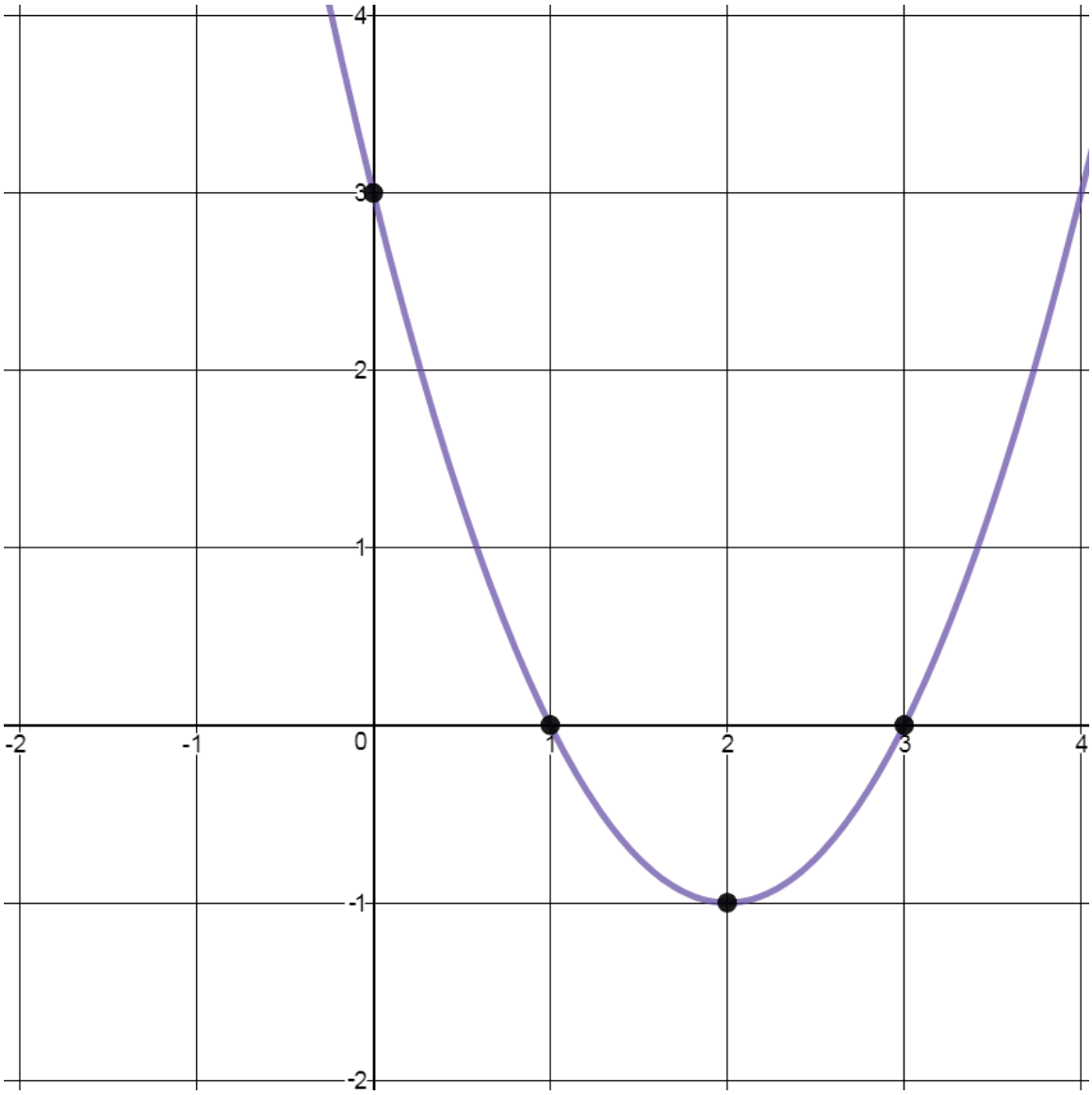
Date: _____

Key Features of Quadratics

The _____ is where the parabola crosses the y-axis.

The line of symmetry is called the _____ of _____



The _____ are also called the zeros or roots.

The turning point of the parabola is called the _____.

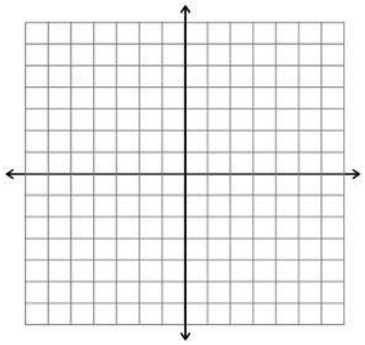
The y-coordinate of the _____ is either a maximum (highest value) or minimum (lowest value).

Example 1

Draw a sketch of a parabola with the following properties:

a) opens up

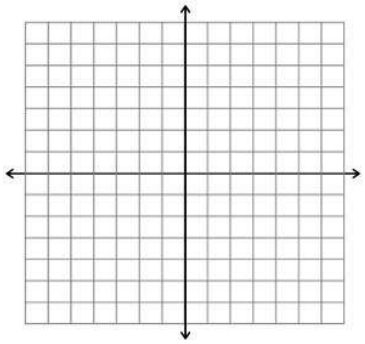
b) opens down



c) two x-intercepts

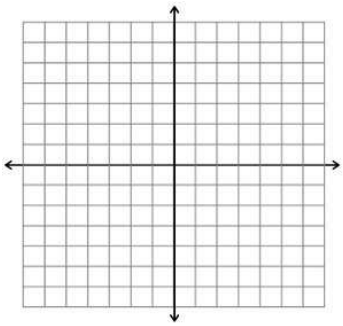
d) one x-intercept

e) no x-intercepts



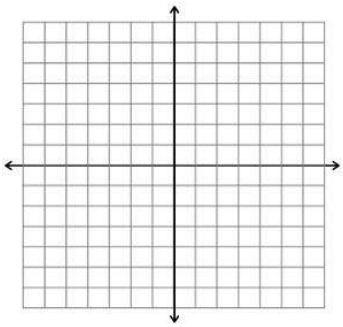
f) has a maximum value

g) has a minimum value



h) axis of symmetry at x=4

i) has a maximum and roots at -1 and 7



Example 2

Identify the key features of each parabola.

a) vertex

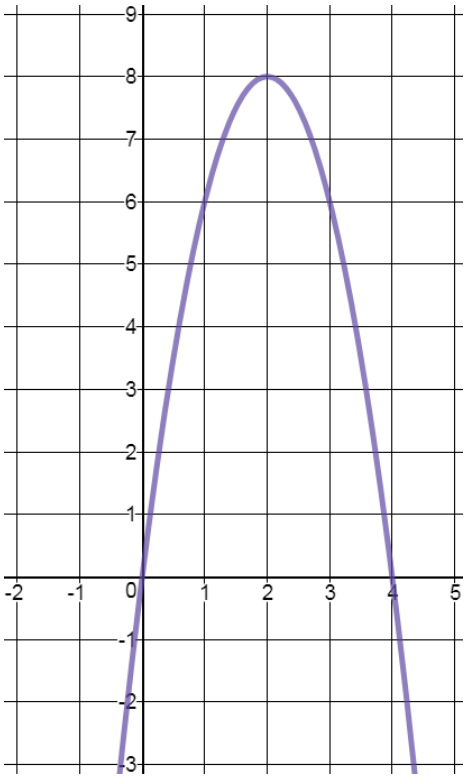
b) equation of axis of symmetry

c) direction of opening

d) max or min value

e) y-intercepts

f) x-intercepts



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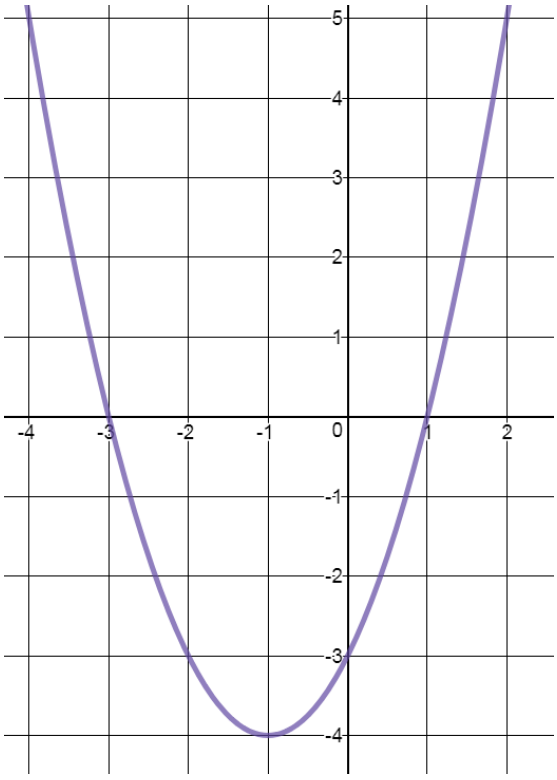

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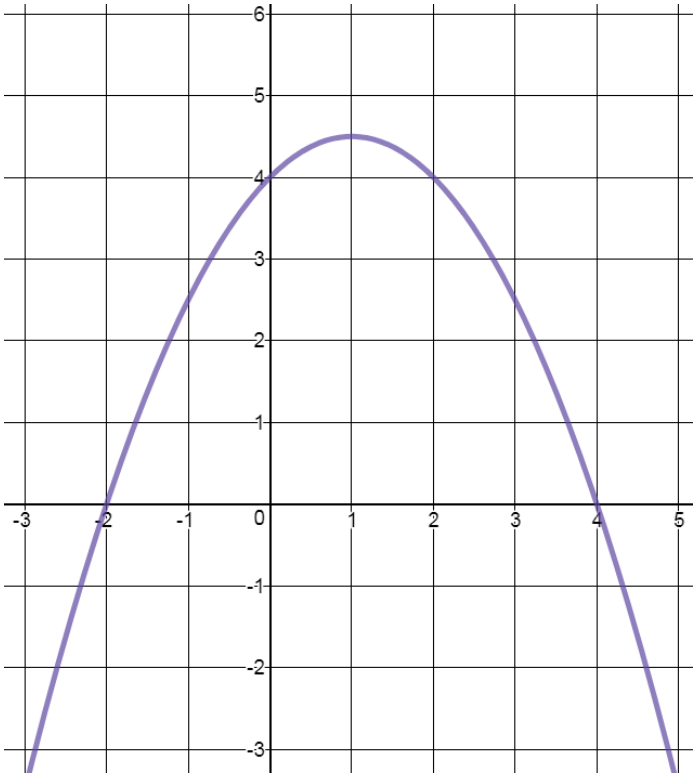
f) x-intercepts



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d) max or min value

e) y-intercepts

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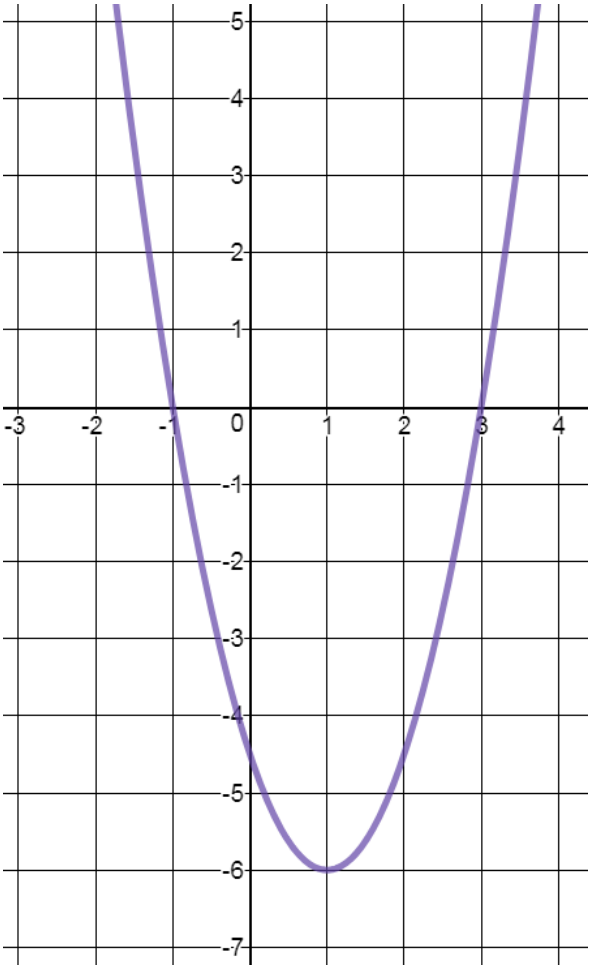
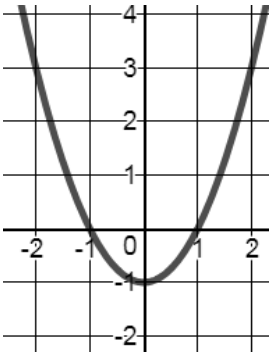
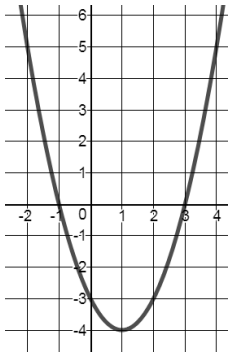
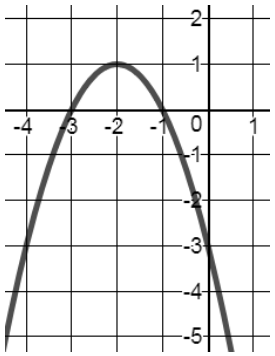
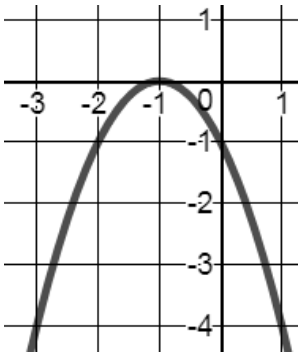
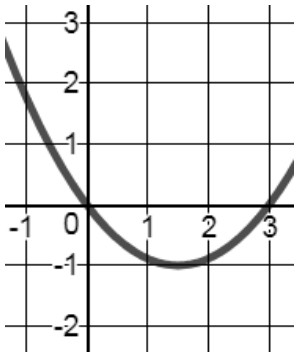
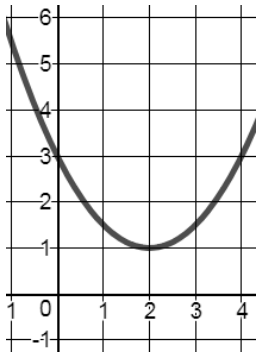
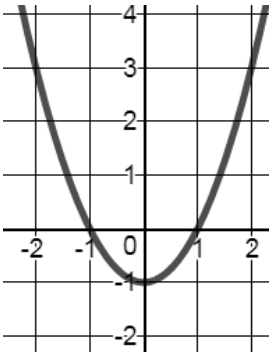
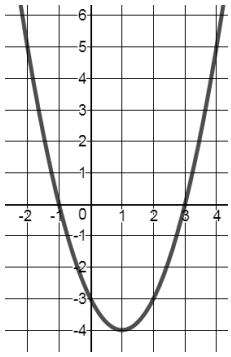
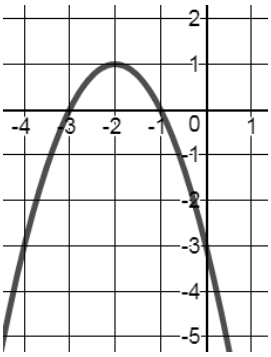


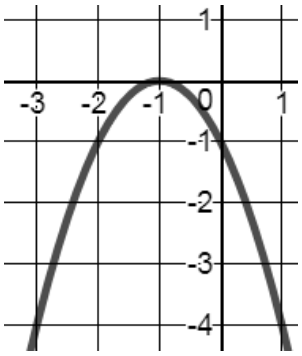
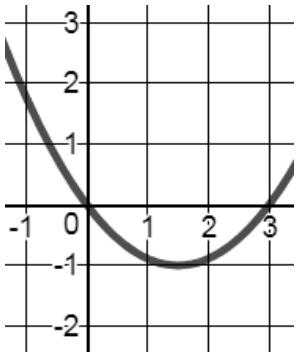
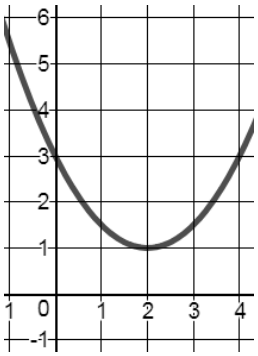
Homework:

Graph			
Vertex			
Axis of Symmetry			
y-intercept			
Zeros			
Maximum/ minimum			

Graph			
Vertex			
Axis of Symmetry			
y-intercept			
Zeros			
Maximum/ minimum			

Answers:

Graph			
Vertex	$(0,-1)$	$(1,-4)$	$(-2,1)$
Axis of Symmetry	$x=0$	$x=1$	$x=-2$
y-intercept	$(0,-1)$	$(0,-3)$	$(0,-3)$
Zeros	$(-1,0)$ and $(1,0)$	$(-1,0)$ and $(3,0)$	$(-1,0)$ and $(-3,0)$
Maximum/ minimum	Minimum	Minimum	Maximum

Graph			
Vertex	$(-1,0)$	$(1.5,-1)$	$(2,1)$
Axis of Symmetry	$x=-1$	$x=1.5$	$x=2$
y-intercept	$(0,-1)$	$(0,0)$	$(0,3)$
Zeros	$(-1,0)$	$(0,0)$ and $(3,0)$	None
Maximum/ minimum	Maximum	Minimum	Maximum