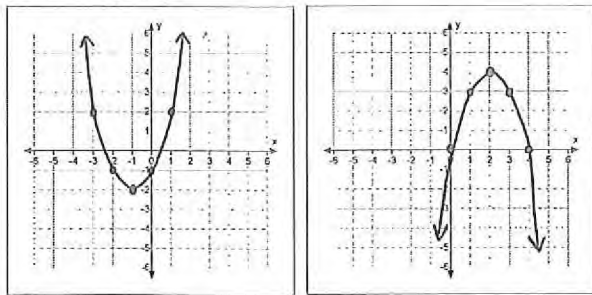
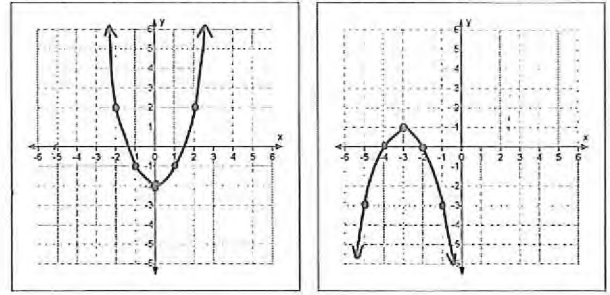


# Identifying characteristics by Graphing (1)

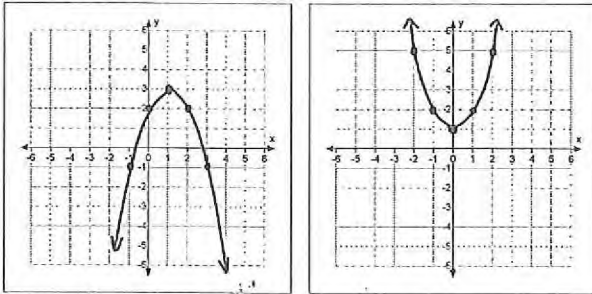
**Vertex:** the highest or lowest point on a parabola (ordered pair)



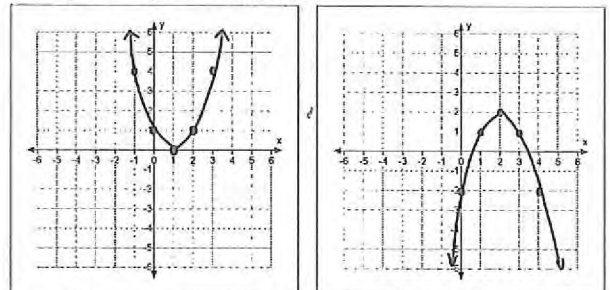
**Axis of Symmetry:** the vertical line that divides the parabola into mirror images ( $x = \underline{\hspace{1cm}}$ )



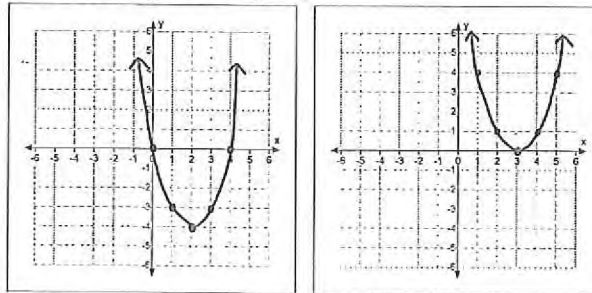
**Extrema:** the minimum or maximum value of the function (min at  $\underline{\hspace{1cm}}$  or max at  $\underline{\hspace{1cm}}$ )



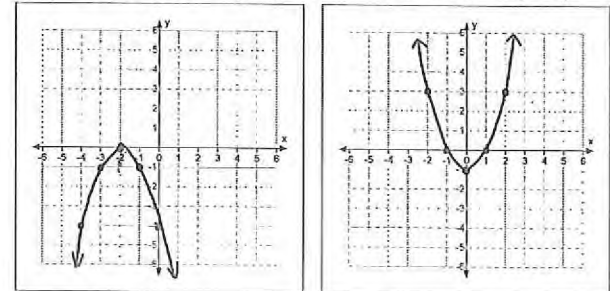
**y-intercept:** the point where the graph crosses the y-axis (ordered pair)



**x-intercept:** the point where the graph crosses the x-axis (ordered pair)

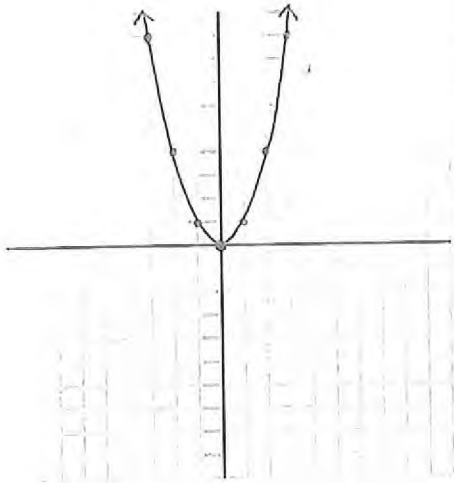


**zeros:** the x value that makes the value of the function 0 (when plug in this value for x,  $y=0$ )

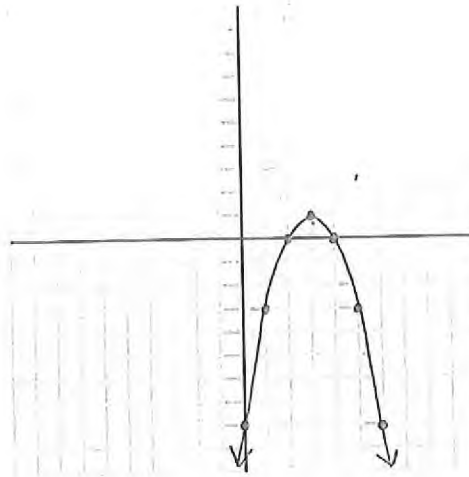


# Practice

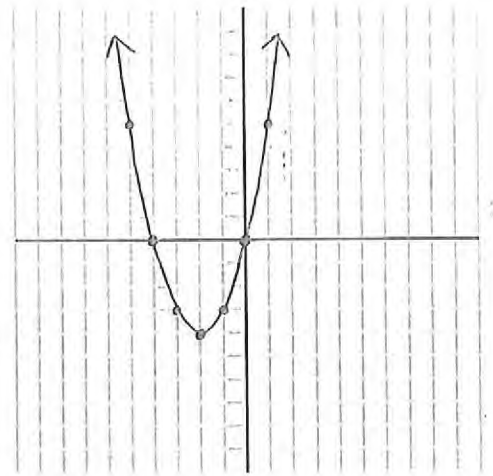
For each graph, identify the vertex, axis of symmetry (AOS), extrema, y-intercept (y-int), x-intercepts (x-int), and zeros.



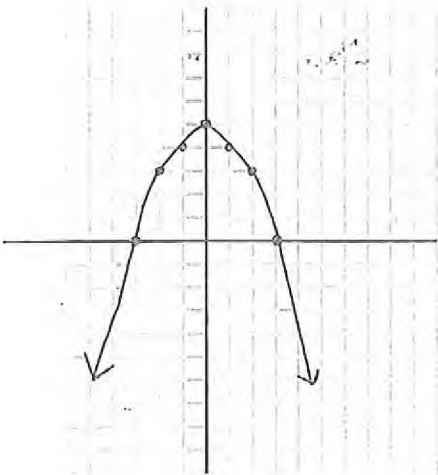
vertex: \_\_\_\_\_  
 AOS: \_\_\_\_\_  
 extrema: \_\_\_\_\_  
 y-int: \_\_\_\_\_  
 x-int: \_\_\_\_\_  
 zeros: \_\_\_\_\_



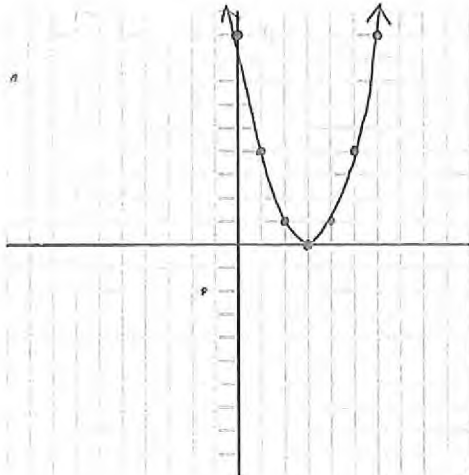
vertex: \_\_\_\_\_  
 AOS: \_\_\_\_\_  
 extrema: \_\_\_\_\_  
 y-int: \_\_\_\_\_  
 x-int: \_\_\_\_\_  
 zeros: \_\_\_\_\_



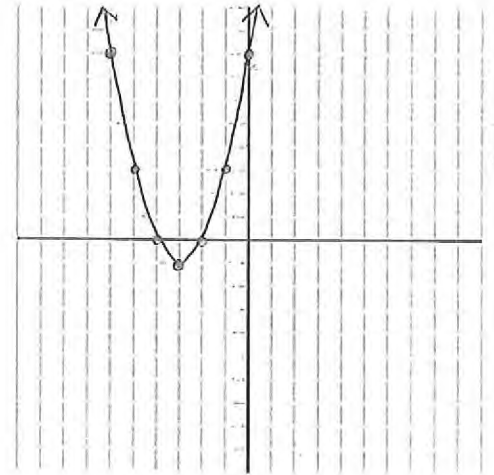
vertex: \_\_\_\_\_  
 AOS: \_\_\_\_\_  
 extrema: \_\_\_\_\_  
 y-int: \_\_\_\_\_  
 x-int: \_\_\_\_\_  
 zeros: \_\_\_\_\_



vertex: \_\_\_\_\_  
 AOS: \_\_\_\_\_  
 extrema: \_\_\_\_\_  
 y-int: \_\_\_\_\_  
 x-int: \_\_\_\_\_  
 zeros: \_\_\_\_\_



vertex: \_\_\_\_\_  
 AOS: \_\_\_\_\_  
 extrema: \_\_\_\_\_  
 y-int: \_\_\_\_\_  
 x-int: \_\_\_\_\_  
 zeros: \_\_\_\_\_

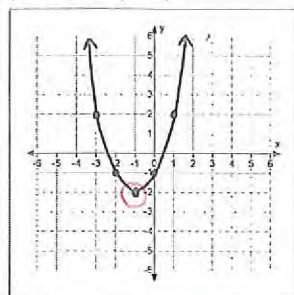


vertex: \_\_\_\_\_  
 AOS: \_\_\_\_\_  
 extrema: \_\_\_\_\_  
 y-int: \_\_\_\_\_  
 x-int: \_\_\_\_\_  
 zeros: \_\_\_\_\_

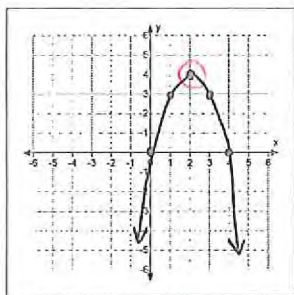
# Identifying characteristics by Graphing (1)

#6

**Vertex:** the highest or lowest point on a parabola (ordered pair)

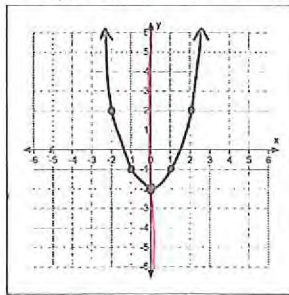


$(-1, -2)$

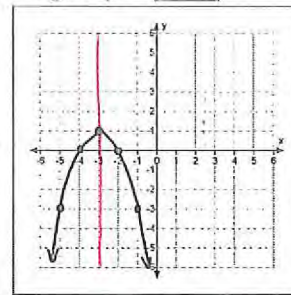


$(2, 4)$

**Axis of Symmetry:** the vertical line that divides the parabola into mirror images ( $x = \underline{\quad}$ )

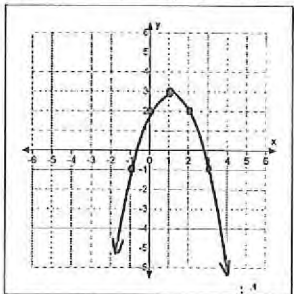


$x = 0$

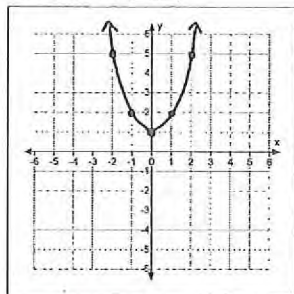


$x = -3$

**Extrema:** the minimum or maximum value of the function (min at  $\underline{\quad}$  or max at  $\underline{\quad}$ )

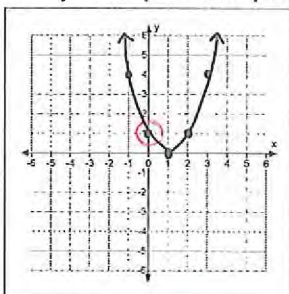


max at 3

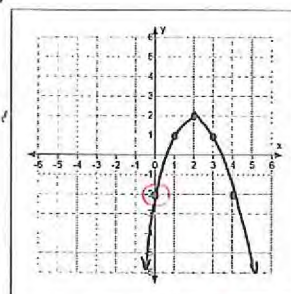


min at 1

**y-intercept:** the point where the graph crosses the y-axis (ordered pair)

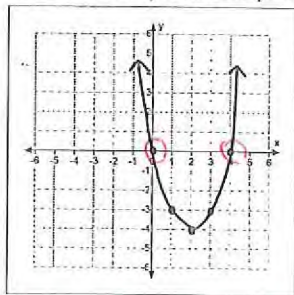


$(0, 1)$

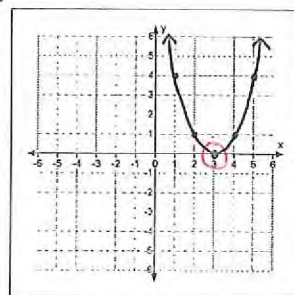


$(0, -2)$

**x-intercept:** the point where the graph crosses the x-axis (ordered pair)

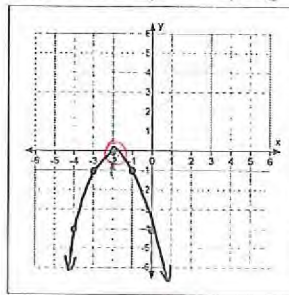


$(0, 0) + (4, 0)$

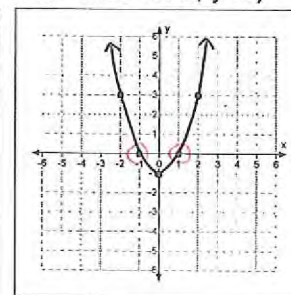


$(3, 0)$

**zeros:** the x value that makes the value of the function 0 (when plug in this value for x,  $y=0$ )



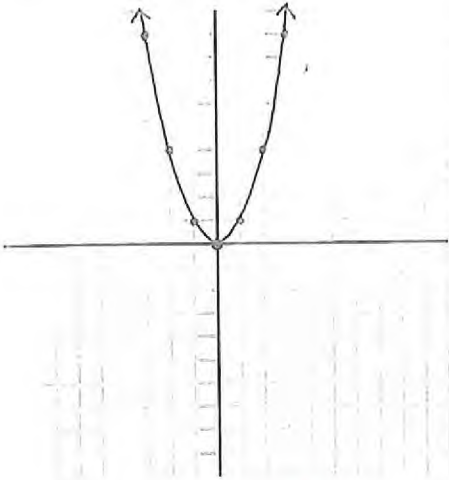
-2



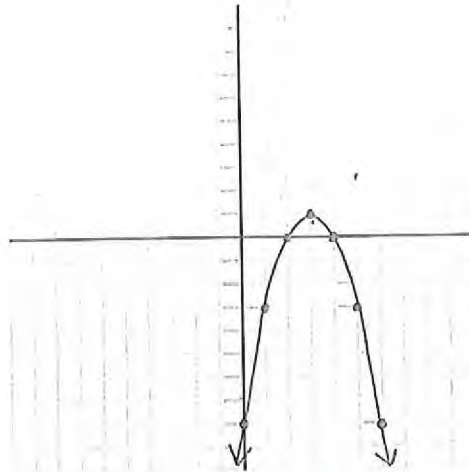
-1 + 1

# Practice

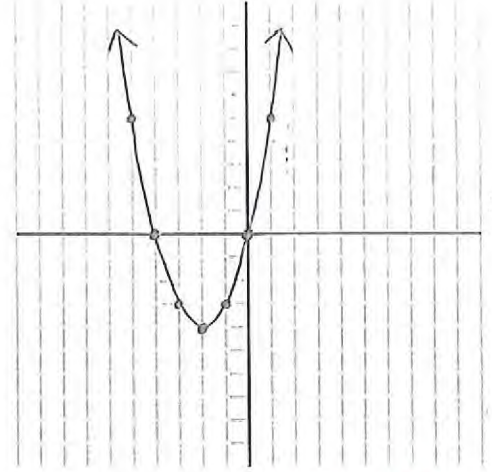
For each graph, identify the vertex, axis of symmetry (AOS), extrema, y-intercept (y-int), x-intercepts (x-int), and zeros.



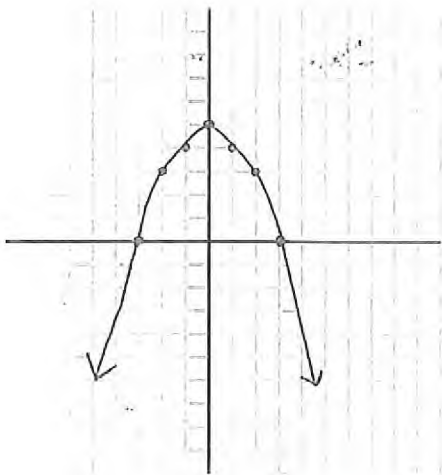
vertex: (0,0)  
AOS:  $x=0$   
extrema: min at 0  
y-int: (0,0)  
x-int: (0,0)  
zeros: 0



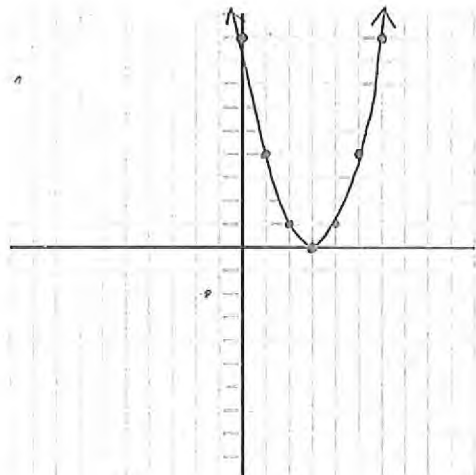
vertex: (3,1)  
AOS:  $x=3$   
extrema: max at 1  
y-int: (0,8)  
x-int: (2,0) + (4,0)  
zeros: 2 + 4



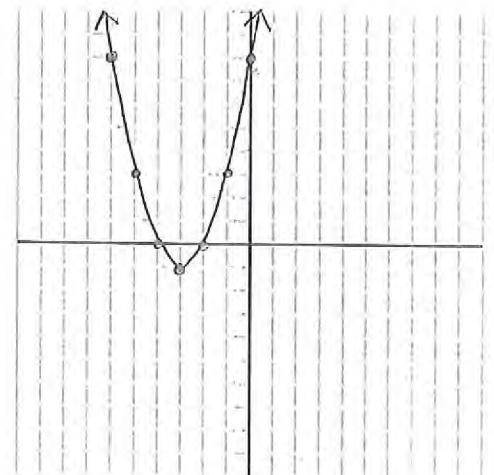
vertex: (-2,-4)  
AOS:  $x=-2$   
extrema: min at -4  
y-int: (0,0)  
x-int: (0,0) + (-4,0)  
zeros: 0 + -4



vertex: (0,5)  
AOS:  $x=0$   
extrema: max at 5  
y-int: (0,5)  
x-int: (-3,0) + (3,0)  
zeros: -3 + 3



vertex: (3,0)  
AOS:  $x=3$   
extrema: min at 0  
y-int: (0,9)  
x-int: (3,0)  
zeros: 3



vertex: (-3,-1)  
AOS:  $x=-3$   
extrema: min at -1  
y-int: (0,8)  
x-int: (-2,0) + (-4,0)  
zeros: -2 + -4