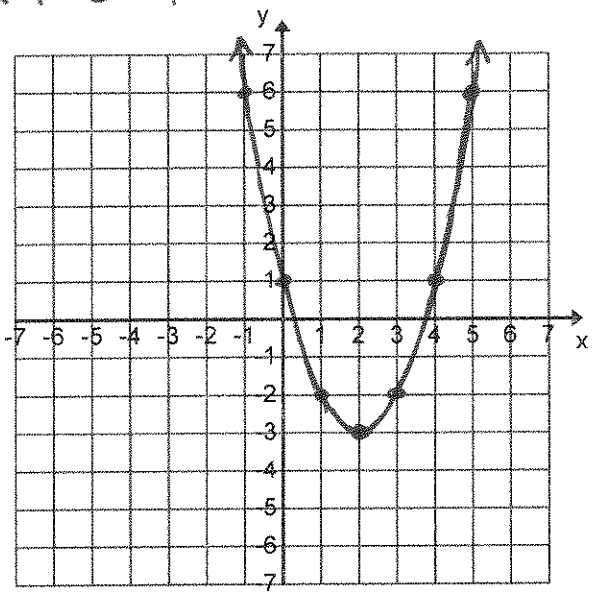
Quiz #10 – Graphing Quadratics #2

1) $y = x^2 - 4x + 1$

$a=1 \quad b=-4 \quad c=1$



1) FIND THE VERTEX

$x = \frac{-b}{2a} \Rightarrow \frac{-(-4)}{2(1)} = \frac{4}{2} = 2$

$y = (2)^2 - 4(2) + 1$

$= 4 - 8 + 1$

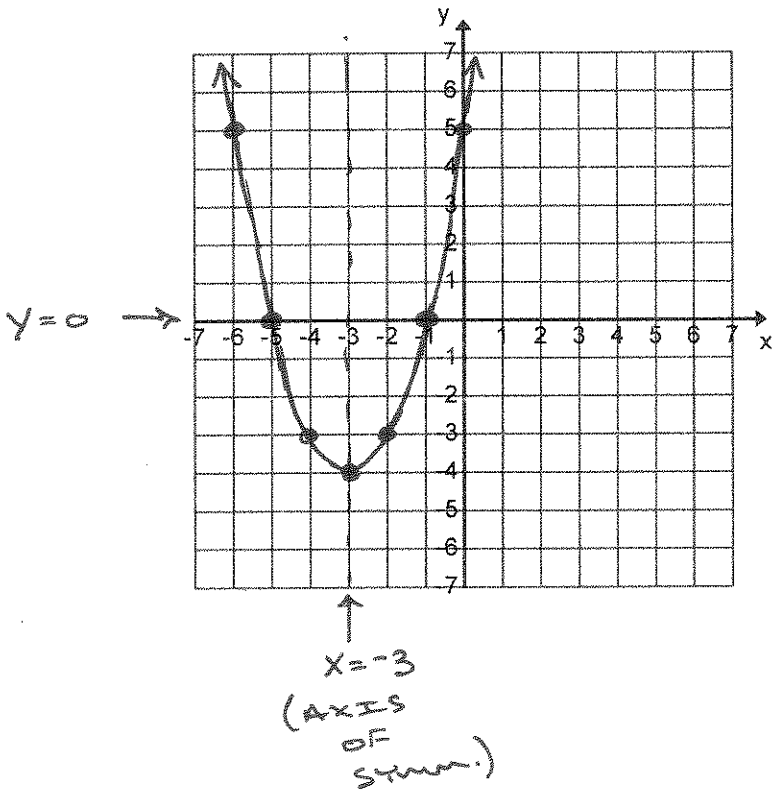
$= -3$

VERTEX

$(2, -3)$

2) USE QUADRATIC PATTERN TO COMPLETE THE GRAPH

2) $y = (x+1)(x+5)$



1) SOLVE FOR X-INTERCEPTS USING THE ZERO PRODUCT PROPERTY

$0 = (x+1)(x+5)$

$x+1=0 \qquad x+5=0$

$x=-1 \qquad x=-5$

X-INTERCEPTS

$(-1, 0)$ AND $(-5, 0)$

2) USE AXIS OF SYMM. TO LOCATE X VALUE IN VERTEX. SUBSTITUTE THAT VALUE INTO THE EQUATION FOR X

$y = (-3+1)(-3+5)$

$= (-2)(2)$

$= -4$

SO THE VERTEX IS LOCATED AT $(-3, -4)$