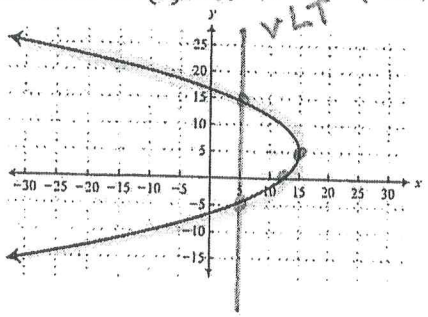
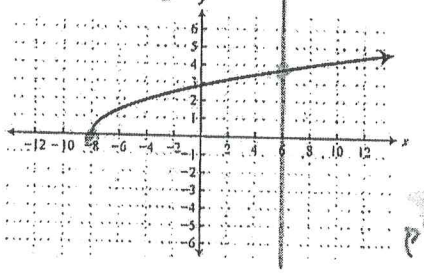
4. For each graph below, determine whether it is a function. Then determine its domain and range in interval notation. Identify **ONE solution to the function (point on the graph)** and **ONE solution to f(x) = 0 (x-intercept).** If asked, write the equation for the graph **(assume no vertical stretch or shrink).**

Function? YES/NO failed VLT
Domain: $(-\infty, 15]$
Range: $(-\infty, \infty)$
Any point on the graph ← Solution to function: (15,5)
Solution to f(x) = 0: x-int (zeros) (12,0)

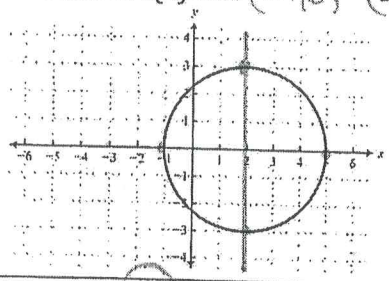


Function? YES/NO passed VLT
Domain: $[-8, \infty)$
Range: $[0, \infty)$
Solution to function: (6,4) (0,3)
Solution to f(x) = 0: x-int (-8,0)
EQUATION: $y = \sqrt{x+8}$

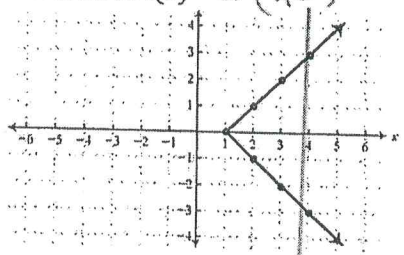


$y = \sqrt{x}$ parent moved 8 to the left $h = -8$
$y = \sqrt{x+8}$ transformed

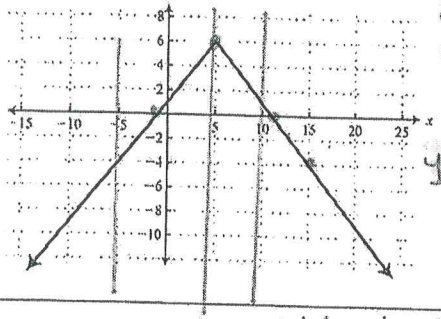
Function? YES/NO
Domain: $[-1, 5]$
Range: $[-3, 3]$
Solution to function: (2,3) (2,-3)
Solution to f(x) = 0: (-1,0) (5,0)



Function? YES/NO
Domain: $[1, \infty)$
Range: $(-\infty, \infty)$
Solution to function: (2,1) (3,2) (4,3)
Solution to f(x) = 0: (1,0)



Function? YES/NO
Domain: $(-\infty, \infty)$
Range: $(-\infty, 6]$
Solution to function: (5,6) (15,-4)
Solution to f(x) = 0: (-1,0) (11,0)
EQUATION: $y = -|x-5|+6$



$y = |x|$ flipped
$y = -|x-5|+6$
5 to the right $h = 5$
6 up $K = 6$
Reflected

Function? YES/NO
Domain: $(-\infty, -1) \cup [1, 3) \cup [3, \infty)$
Range: $(-\infty, \infty)$
Solution to function: (1,2)
Solution to f(x) = 0: (5,0) (-2,0)