

Sol<sup>n</sup>

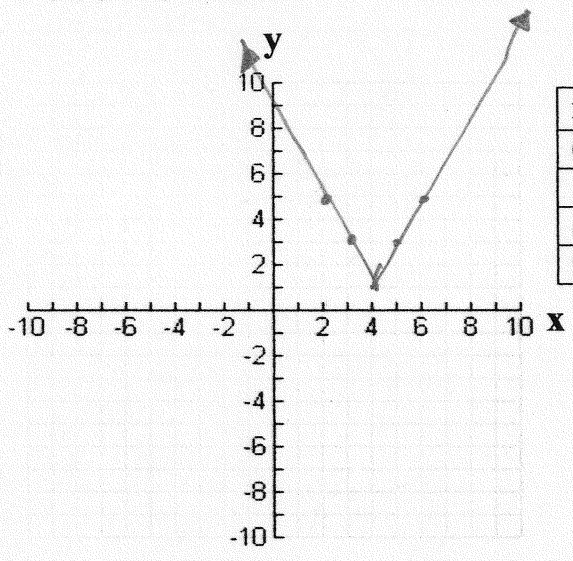
### Quiz: Properties of Functions

Graph the following functions then list the properties of each function in the table below.

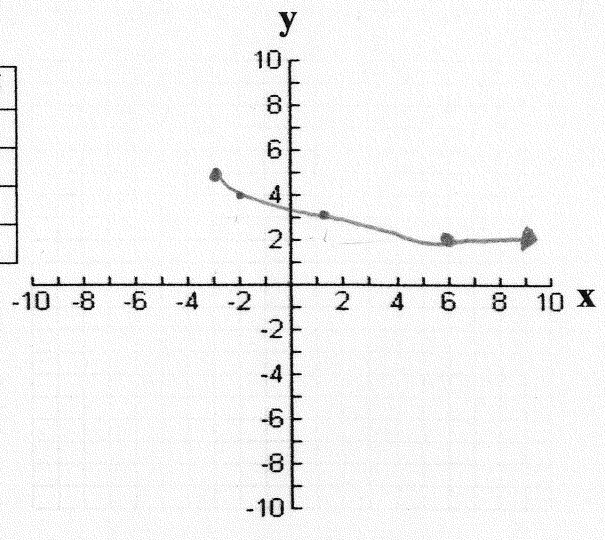
a)  $y = 2|-1(x-4)|+1$   
 $f(x) = 2|-x+4|+1$

b)  $f(x) = -\sqrt{x+3}+5$

x	y =  x
-2	2
-1	1
0	0
1	1
2	2



x	y = √x
0	0
1	1
4	2
9	3



k = -1  
d = 4  
a = 2  
c = 1

k = 1  
d = -3  
a = -1  
c = 5

Domain	$x \in \mathbb{R}$
Range	$y \in \mathbb{R} \mid y \geq 1$
Intervals of Increase	$(4, \infty)$
Intervals of Decrease	$(-\infty, 4)$
Discontinuities	None
x-intercepts	None
y-intercepts	9
symmetry	Neither
end behaviours	$\text{as } x \rightarrow -\infty, y \rightarrow \infty$ $\text{as } x \rightarrow \infty, y \rightarrow \infty$

Domain	$x \in \mathbb{R} \mid x \geq -3$
Range	$y \in \mathbb{R} \mid y \leq 5$
Intervals of Increase	None
Intervals of Decrease	$(-3, \infty)$
Discontinuities	None
x-intercepts	22
y-intercepts	~3.27
symmetry	Neither
end behaviours	$\text{as } x \rightarrow -3, y \rightarrow 5$ $\text{as } x \rightarrow \infty, y \rightarrow -\infty$

x-int (y=0)  
 $-\sqrt{x+3}+5=0$   
 $(-\sqrt{x+3})^2 = (-5)^2$   
 $(-1)^2(\sqrt{x+3})^2 = 25$   
 $x+3 = 25$   
x-int = 22

y-int (x=0)  
 $y = -\sqrt{0+3}+5$   
y-int = 3.27