

Warm-up :

$y = x^2$  ↻

① Graph

$y = \frac{1}{2}(x+2)^2 - 3$

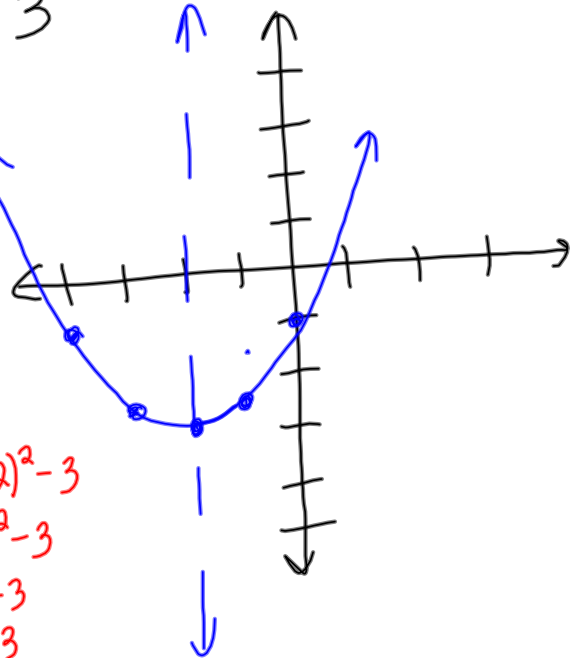
v: (h, k): (-2, -3)

aos:  $x = -2$

x	y
-1	$-2\frac{1}{2}$
0	-1

$\frac{1}{2}(-1+2)^2 - 3$   
 $\frac{1}{2}(1)^2 - 3$   
 $\frac{1}{2} \cdot 1 - 3$   
 $\frac{1}{2} - 3$   
 $-2\frac{1}{2}$

$\frac{1}{2}(0+2)^2 - 3$   
 $\frac{1}{2}(2)^2 - 3$   
 $\frac{1}{2} \cdot 4 - 3$   
 $2 - 3$   
 $-1$



② Graph

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

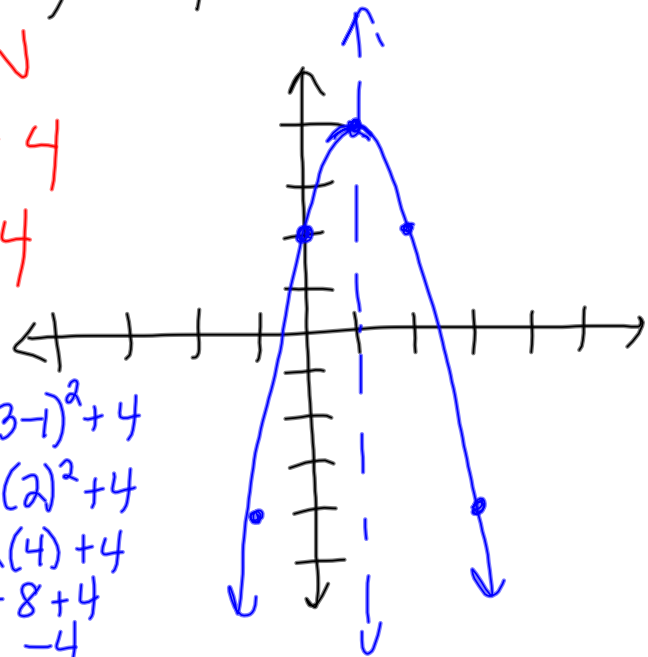
v: (1, 4) D: ARN  
 R:  $y \leq 4$

aos:  $x = 1$  max: 4

x	y
2	2
3	-4

$-2(2-1)^2 + 4$   
 $-2(1)^2 + 4$   
 $-2 \cdot 1 + 4$   
 $-2 + 4$   
 $2$

$-2(3-1)^2 + 4$   
 $-2(2)^2 + 4$   
 $-2(4) + 4$   
 $-8 + 4$   
 $-4$



③ Graph  $f(x) = \frac{3}{2}(x-2)^2 - 3$

V:  $(2, -3)$

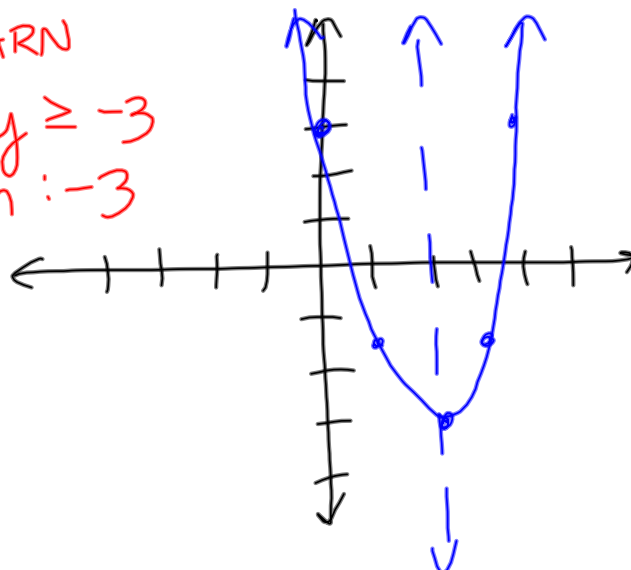
D: ARN

R:  $y \geq -3$

min:  $-3$

AOS:  $x = 2$

x	y	
3	$-1\frac{1}{2}$	$-\frac{3}{2} - 3$
4	3	$6 - 3$



Graph  $y = \sqrt{x+1} - 5$

Square  
root  
function  
→

$$y = 2\sqrt{x} + 1$$