

13. Solve the system algebraically

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

$$y = 6x - 3$$

$$\begin{array}{r} x^2 + 4x - 2 = 6x - 3 \\ -6x + 3 \quad -6x + 3 \\ \hline \end{array}$$

$$(1, ?)$$

$$x^2 - 2x + 1 = 0$$

$$y = 6(1) - 3$$

$$y = 6 - 3 = 3$$

$$\begin{array}{r} 1 \\ -1 \\ -2 \end{array}$$

$$(x-1)^2 = 0$$

$$\begin{array}{r} x-1 = 0 \\ +1 \quad +1 \\ \hline x = 1 \end{array}$$

$$\boxed{(1, 3)}$$

Graph the given equations using our 4 step process

1. Eqn of LOS 2. Vertex 3. Get 2 pts using "slope" $\frac{a}{1}$ 4. Get y-intercept & symmetrical partner

14. $g(x) = x^2 - 2x - \frac{5}{15}$

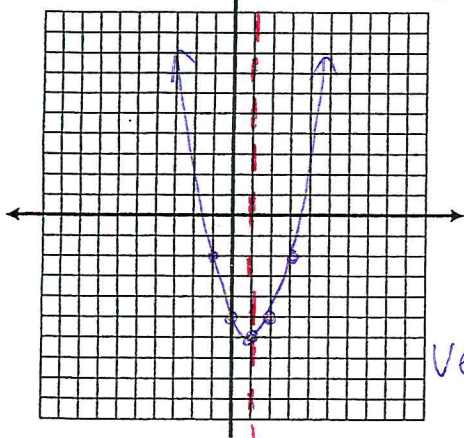
1. LOS $x = \frac{-(-2)}{2(1)} = \frac{2}{2} \quad \boxed{x=1}$

2. $V(1, ?) \quad g(1) = 1^2 - 2(1) - 5$
 $1 - 2 - 5 = -6$

$$V(1, -6)$$

3. $a = 1$ "m" = $\frac{1}{1}$ (0, -5) (2, -5)
up 1, over 1 from V

4. y-int already found $\nearrow$ so let $x=3$
 $g(3) = 3^2 - 2(3) - 5$
 $9 - 6 - 5 = -2$



$$(3, -2)$$

$$(-1, -2) \text{ by symmetry}$$

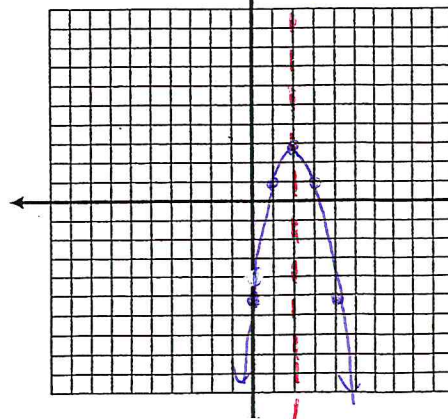
vertex is a minimum

15. $h(x) = -2(x-2)^2 + 3$

1. LOS $\boxed{x=2}$ 2. $V(2, 3)$

3. $a = -2$ "m" = $-\frac{2}{1}$ Down 2, over 1
 $(1, 1) \quad (3, 1)$

4. y-int $h(0) = -2(0-2)^2 + 3$
 $-2(-2)^2 + 3$
 $-2(4) + 3$
 $-8 + 3 = -5$
 $(0, -5) \quad (4, -5)$
by symmetry



vertex is a max