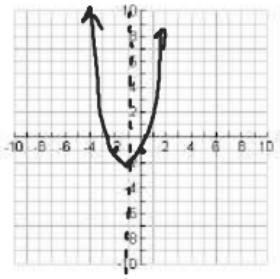
~~$f(x) = a(x-h)^2 + k$~~

Covert each quadratic to vertex ~~form~~ and then graph the function.

$f(x) = x^2 + 2x - 1$



$f(x)+1 = x^2+2x+1$

$+1$

$f(x)+2 = (x+1)^2$

$f(x) = (x+1)^2 - 2$

$V(-1,-2)$ A.O.S $x=-1$

$(0,-1)$ $x = -1 \pm \sqrt{2}$

$0 = (x+1)^2 - 2$ $-.41, -2.41$

$2 = (x+1)^2$

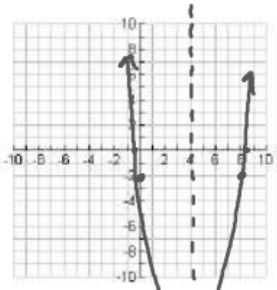
$\pm\sqrt{2} = x+1$

$f(x) = x^2 - 8x - 2$

$f(x) = x^2 - 8x + 2$

$f(x)+2 = x^2 - 8x$

$+16$



$f(x)+18 = (x-4)^2$

$f(x) = (x-4)^2 - 18$

$V(4,-18)$ A.O.S $x=4$

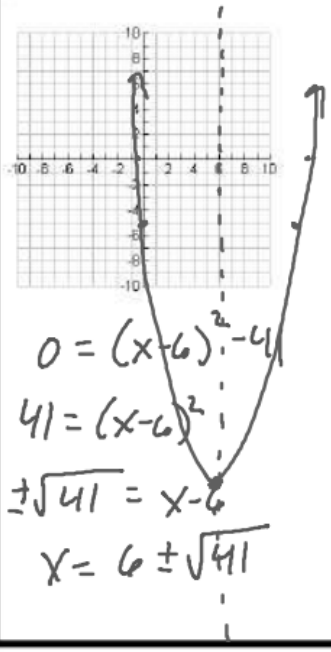
$(0,-2)$

$0 = (x-4)^2 - 18$ $x = 4 \pm \sqrt{18}$

$18 = (x-4)^2$ $4 \pm 3\sqrt{2}$

$\pm\sqrt{18} = x-4$ $-.24$ 8.24

$f(x) = x^2 - 12x - 5$



$f(x)+5 = x^2 - 12x + 36$

$+36$

$f(x)+41 = (x-6)^2$

$f(x) = (x-6)^2 - 41$

$V(6,-41)$

A.O.S $x=6$

$(0,-5)$

$0 = (x-6)^2 - 41$

$41 = (x-6)^2$

$\pm\sqrt{41} = x-6$

$x = 6 \pm \sqrt{41}$

$f(x) = x^2 + 10x + 30$