change sign keep sign change signs

Vertex Form: $f(x) = a(x-h)^2 + k$	Standard Form: $f(x) = ax^2 + bx + c$	Intercept Form: $f(x) = a(x-p)(x-q)$
Benefits: Vertex: (h, k) AOS: $x = h$	**Benefits:** AOS: $x = \frac{-b}{2a}$ y-intercept: $(0, c)$	**Benefits:** x-int: $(p, 0)(q, 0)$ AOS: $x = \frac{p+q}{2}$

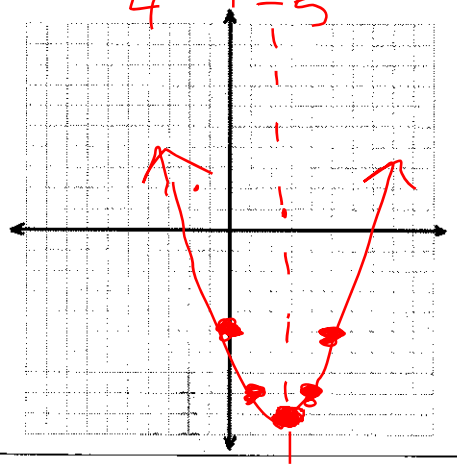
Use all three forms to graph the function:

$f(x) = (x-2)^2 - 9$ (h, k) — $f(x) = x^2 - 4x - 5$ — $f(x) = (x-5)(x+1)$

AOS: $x = 2$

Vertex: $(2, -9)$

x	y
0	−5
1	−8
2	−9
3	−8
4	−5



$a = 1 \quad b = -4 \quad c = -5$

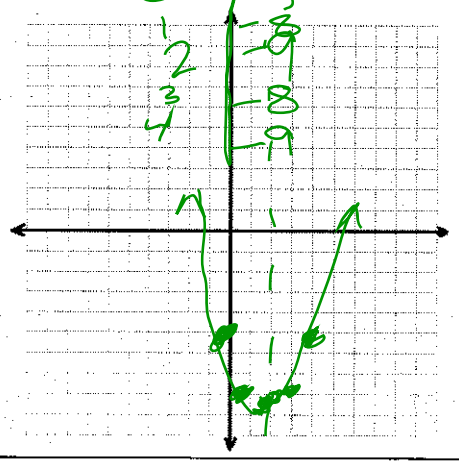
AOS: $x = \frac{-b}{2a} = \frac{-(-4)}{2(1)} =$

$x = 2$

Vertex $(2, -9)$

$(2)^2 - 4(2) - 5 = -9$

x	y
0	−5
1	−8
2	−9
3	−8
4	−5



x-int: $(5, 0)(-1, 0)$

AOS: $\frac{p+q}{2} = \frac{5+-1}{2}$ $x = 2$

Vertex: $(2, -9)$

$(2-5)(2+1)$

x	y
0	−5
1	−8
2	−9
3	−8
4	−5