

# Sketching Quadratics using factors

+  $f(x) = ax^2 + bx + c$

1. y-int  $\rightarrow x=0$

2. Factoring  $\rightarrow$  x-intercept

example:  $f(x) = x^2 + 5x + 6$

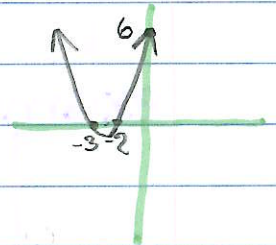
$x \quad 2$   $f(0) = (0)^2 + 5(0) + 6 = 6$  y-int

x	$x^2$	2x
3	3x	6

$x+2=0$   $x+3=0$

$-2-2$   $-3-3$

$x=-2$   $x=-3$



example 2:  $f(x) = 2x^2 + 6x + 4$

$x \quad 1$   $f(0) = 2(0)^2 + 6(0) + 4 = 4$  y-int

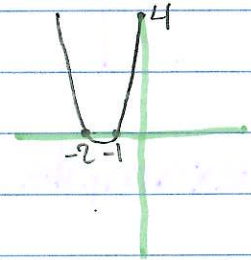
x	$x^2$	x
2	2x	2

$f(x) = 2(x^2 + 3x + 2)$

$x+1=0$   $x+2=0$

$-1-1$   $-2-2$

$x=-1$   $x=-2$



example 3:  $f(x) = x^2 + 6x + 9$

$x \quad 3$   $f(0) = (0)^2 + 6(0) + 9 = 9$  y-int

x	$x^2$	3x
3	3x	9

$x+3=0$

$-3-3$

$x=-3$

