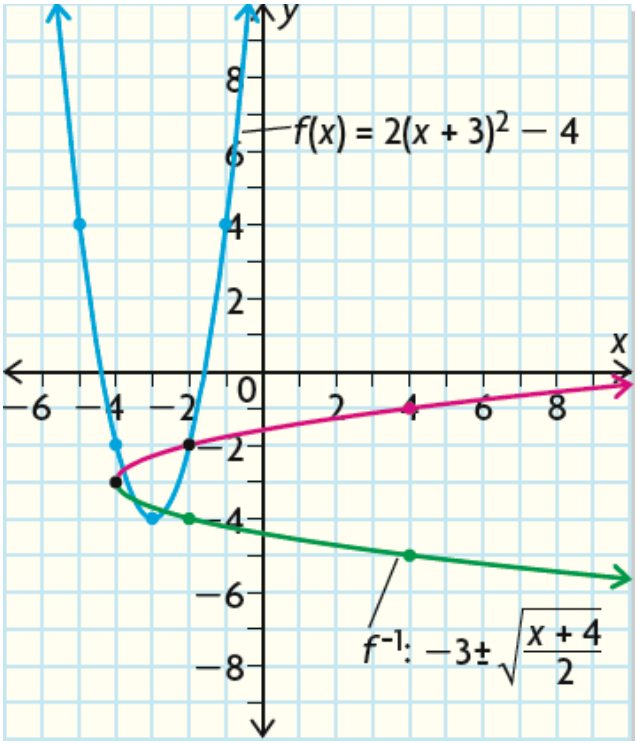
QUADRATIC FUNCTIONS SUMMARY

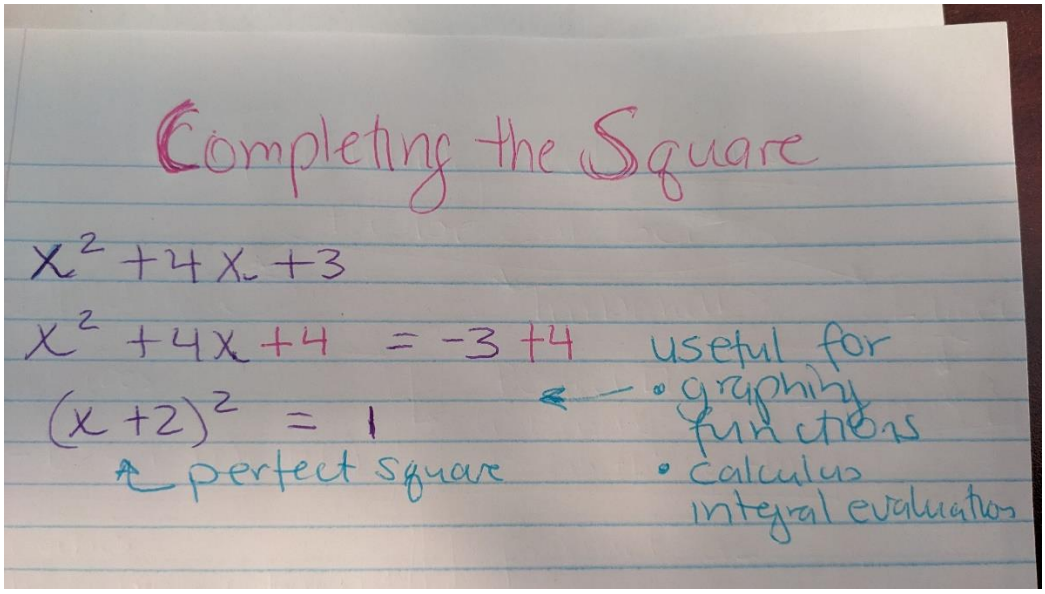
Definitions:

Minimum Values (open up) x^2 functions have a minimum value at the vertex
Maximum Values (open down) $-x^2$ have a maximum value at the vertex
Radical Number $\sqrt{\ }$
Zeros of an Equation the roots of the equation

Graphing Inverse Quadratic Functions

Graph the original equation. Then reverse x y coordinates and graph those inverse values.





Factoring Quadratics

Factor Out GCF

Binomial

Δ squares

$a^2 - b^2 = (a-b)(a+b)$

Δ cubes

$a^3 - b^3 = (a-b)(a^2+ab+b^2)$

Σ cubes

$a^3 + b^3 = (a+b)(a^2-ab+b^2)$

Trinomial

Perfect □

$a^2+2ab+b^2 = (a+b)^2$

$a^2-2ab+b^2 = (a-b)^2$

product ac

sum b

X-method

$28x^2+51x-27$

756	−1 = 755
378	−2 = 376
189	−3 = 249
126	−6 = 120
108	−7 = 101
84	−9 = 75
63	−12 = 51

(−756, 1; 63, −12; 51)

$28x^2+63x-12x-27$

$\rightarrow 28x^2-12x+63x-27$

$= 4x(7x-3)+9(7x-3)$

$= (4x+9)(7x-3)$

box representation

	$7x$	-3
$4x$	$28x^2$	$-12x$
9	$63x$	-27

Quadratic formula

$$x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$$

Larger

group