

10.3 GRAPHING EXTENSION (pgs 650-651)

EXAMPLE 1 - FIND THE MAXIMUM OR MINIMUM

$$y = -2x^2 - 6x + 7 \quad A = -2 \checkmark \quad B = -6 \quad C = 7$$

USING GRAPHING CALC AND PAGE 650 NOTES

* SINCE $A = -2$, THE PARABOLA OPENS DOWN, SO THE VERTEX WILL BE A MAXIMUM

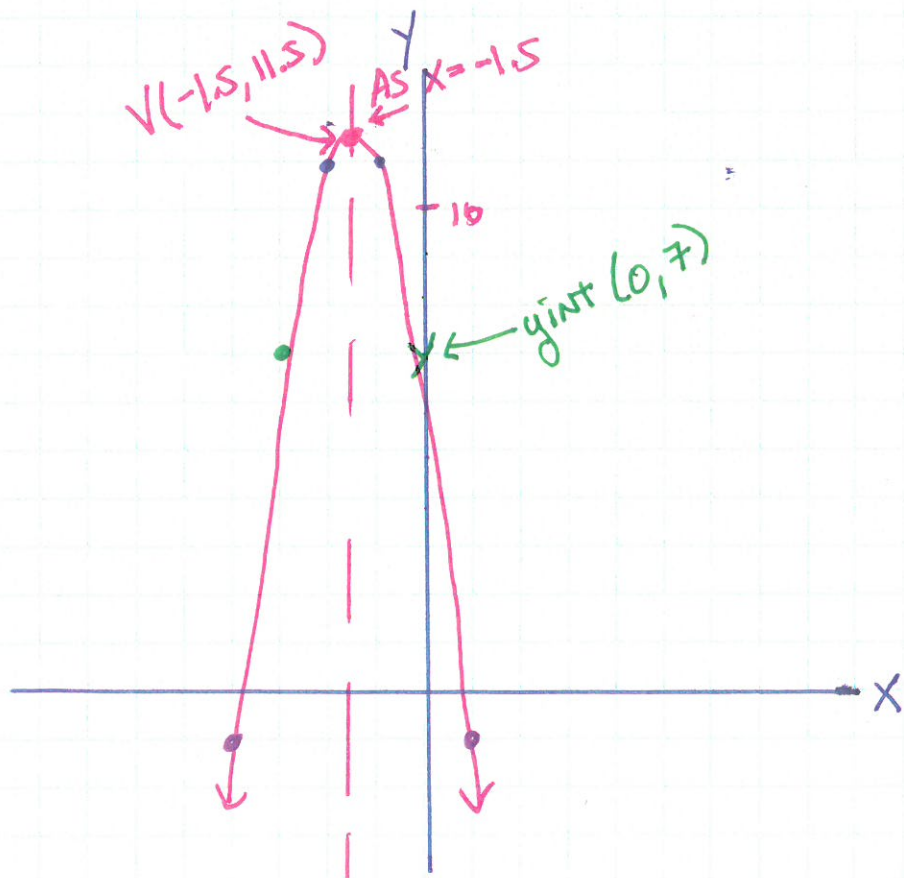
* The maximum is THE VERTEX
 $V: (-1.5, 11.5)$

* The Axis of Symmetry \swarrow
AS: $X = -1.5$

* TABLE

Graph enough points to cross the X-axis

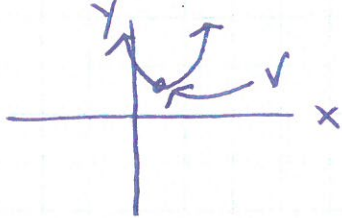
				V			
X	-4	-3	-2	-1.5	-1	0	1
Y	-1	7	11	11.5	11	7	-1



10.3 PRACTICE - FIND MIN + Max (Round 2 decimals)

#'s 1, 5, 6

① $y = 3x^2 - 8x + 7$

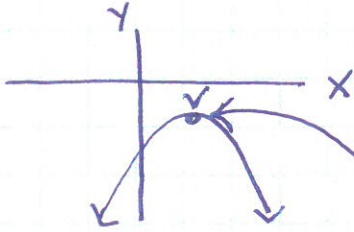


A=3 opens up \curvearrowright Vertex will be a Minimum
B=-8
C=7

VERTEX (1.33, 1.67)

AS: $x = 1.33$

⑤ $y = -1.4x^2 + 3.8x - 6.1$



A=-1.4 opens down (Max)

B=3.8
C=-6.1

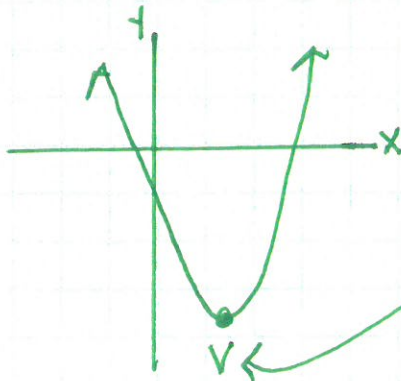
VERTEX (1.36, -3.52)

AS: $x = 1.36$

⑥ $y = 2.57x^2 - 8.45x - 5.04$

A=2.57 opens up \curvearrowright Vertex is Min.

B=-8.45
C=-5.04



VERTEX (1.64, -11.99)

Window
Make
 $y_{min} = -15$

EXAMPLE 2 USE GRAPHING CALC + PG 651 NOTES

$$y = 3x^2 + 2x - 4 \quad \uparrow A=3 \quad B=2 \quad C=-4$$

FIND ZERO'S (ROUND 2 DECIMALS)

$$X_{INT} \quad (-1.54, 0) \\ (.87, 0)$$

$$\text{SOLUTIONS ARE } x = -1.54, .87$$

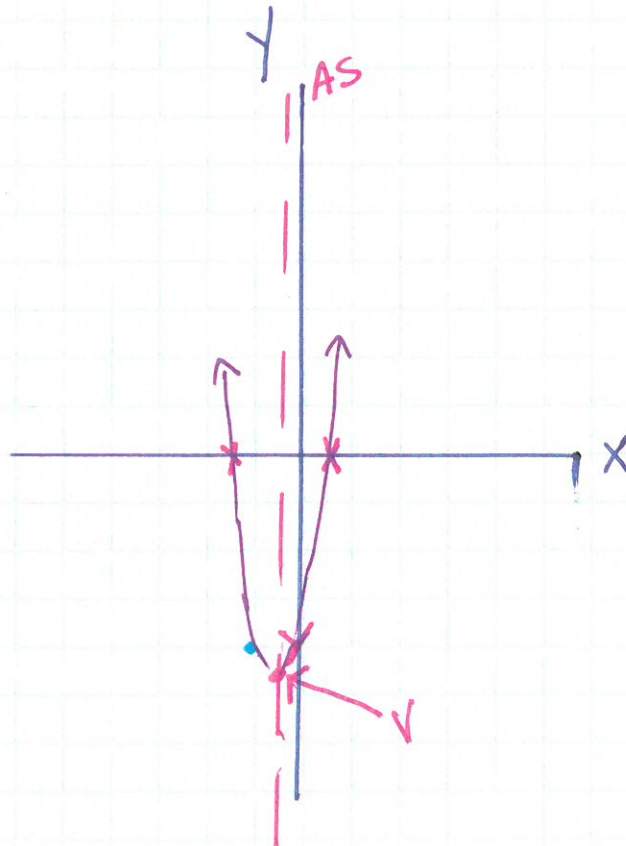
Remember to
Check Solutions
IN ORIG EQ.NOW GRAPH!

① FIND VERTEX (MIN) $\rightarrow (-.33, -4.33)$

② FIND AS: $x = -0.33$

③ YINT $(0, -4)$

$X_{INT}'S \rightarrow X$
 $Y_{INT} \rightarrow Y$
 AS dotted line
 Vertex $\rightarrow V$



10.3 PRACTICE #7-14 (HW)

⑦ $y = 2x^2 - 5x - 8$ $A=2$ $B=-5$ $C=-8$

$y_{INT} (0, -8)$

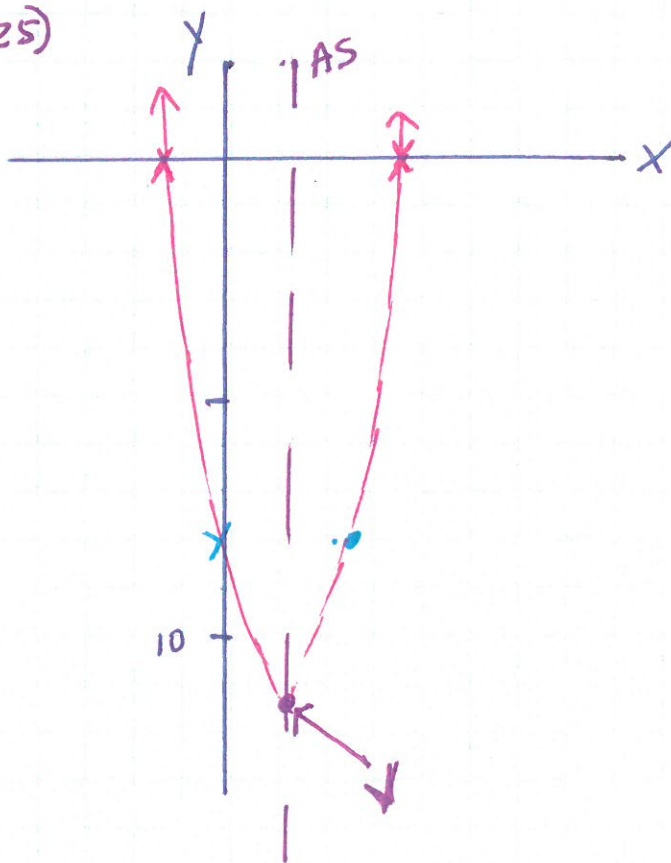
$x_{INT} (-1.11, 0) (3.61, 0)$

$V (min) : (1.25, -11.125)$

AS $x=1.25$

ROOTS $x = -1.11, 3.61$

WINDOW
 $y_{MIN} = -15$



⑧ $y = -3x^2 + 6x - 2$ $A=-3$ $B=6$ $C=-2$

$y_{INT} (0, -2)$

$x_{INT} (0.42, 0)$
 $(1.58, 0)$

ROOTS $x = .42, 1.58$

Vertex $(1, 1)$

AS $x=1$

