

Alg. 1 - BE TUESDAY 2-15-11

Factor:

① $25y^2 - 49w^2$

② $x^2 - 16x + 64$

③ $x^2 + 14x + 24$

④ $6x^3 + 15x^2 - 9x$

⑤ $2x^2 - 3x - 18$

Steps:

① GCF

② Look for PATTERN

③ Magic Number
Method

④ Use d to check
if prime

1.
GRAPHING QUADRATIC FUNCTIONS,
CHAPTER 10-1 \Rightarrow Page 524

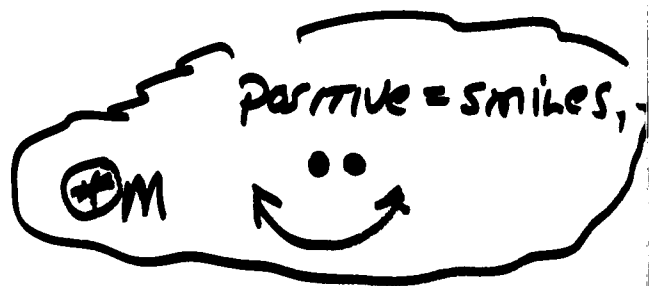
EX1 $y = 2x^2 - 4x - 5$

① PUT IN STANDARD FORM \checkmark

$$a = 2$$

$$b = -4$$

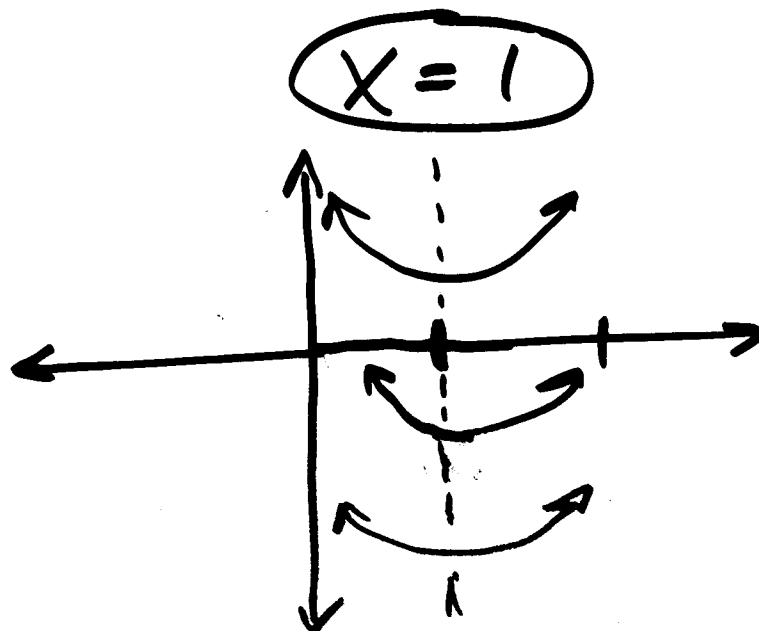
$$c = -5$$



② IF a IS \oplus \curvearrowright PARABOLA OPENS UP

IF a IS \ominus \curvearrowleft PARABOLA OPENS DOWN

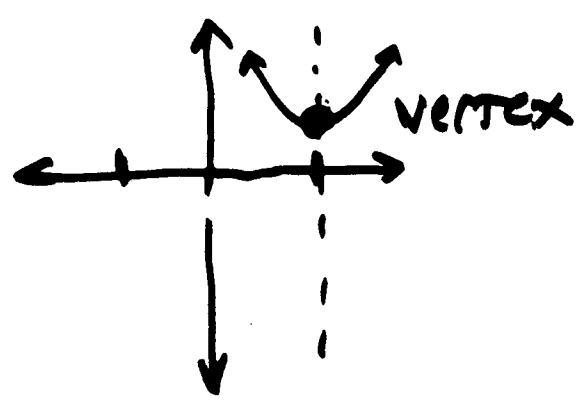
③ AOS $\Rightarrow x = \frac{-b}{2a} = \frac{-(-4)}{2(2)} = \frac{-(-4)}{2(2)}$



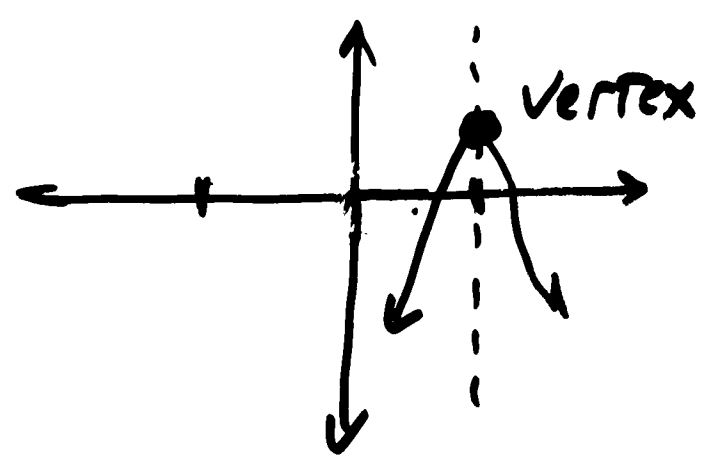
The lowest or highest point on the parabola is called the vertex.

Its X-coordinate must be $-\frac{b}{2a}$

since it is on the AOS



vertex is minimum
for \curvearrowright parabola



vertex is maximum
for \curvearrowleft parabola

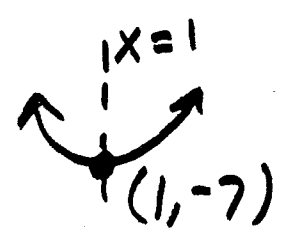
If $f(x) = 2x^2 - 4x - 5$ $-\frac{b}{2a} = 1$

$y = f(2) = 2(1)^2 - 4(1) - 5$

$f(2) = 2(1)^2 - 4(1) - 5$

$f(2) = 2 \cdot 1 - 4 - 5 = -7$ \therefore vertex

is at
 $(1, -7)$



Big ADVANTAGE ON T-TABLE NOW YOU KNOW AQS IS ON $X=1$

GO 1 LESS, TO $X=0, Y=-5$

AND YOU KNOW $Y=-5$ WHEN X IS ONE MORE THAN 1 $\Rightarrow 2$

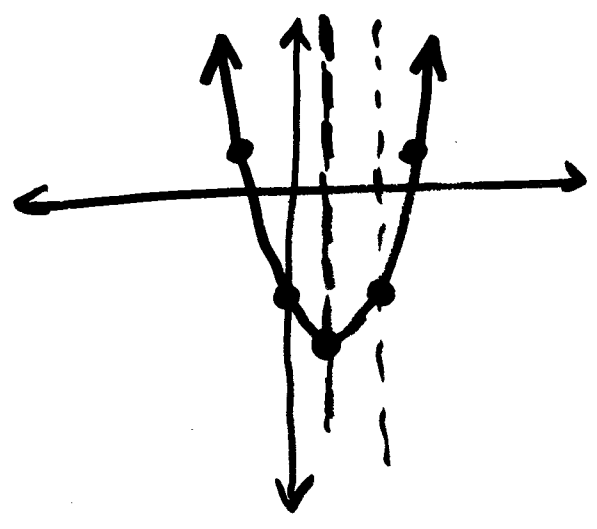
X	Y
0	-5
1	-7
2	-5

ONE POINT GETS YOU 2!
 DON'T HAVE TO CALCULATE

5 POINTS MAKE A NICE PARABOLA, IF ONE IS THE VERTEX, TRY 2 MORE THAN $X=1$

X	$Y = 2x^2 - 4x - 5$
3	$18 - 12 - 5 = 1$
-1	1

KNOW FROM ABOVE

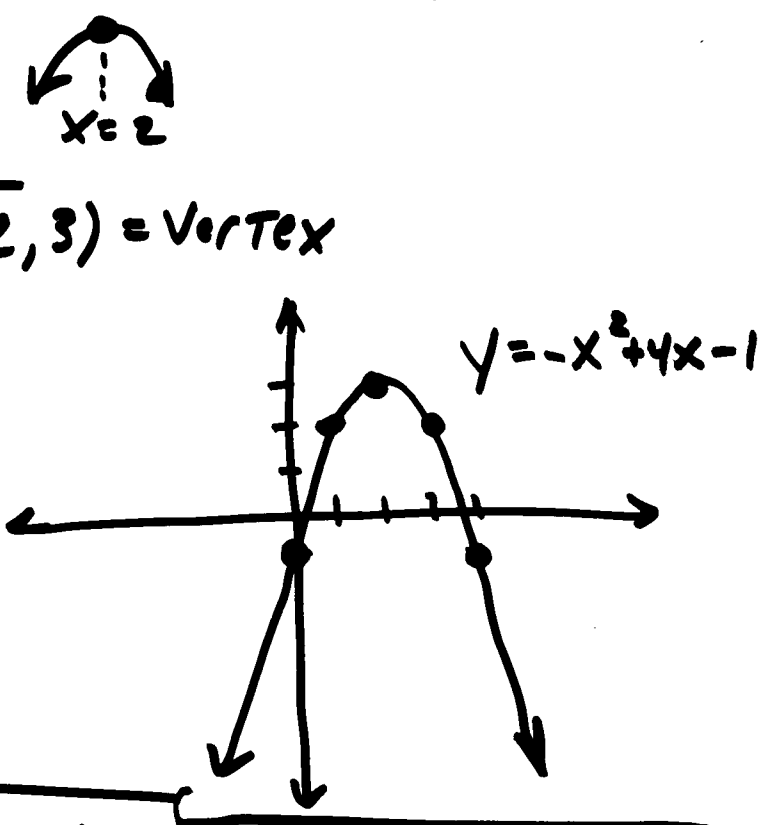


Summary of Graphing Parabolas
 using a "SMART T-TABLE" AND
 THE PROPERTIES OF SYMMETRY, UP/DOWN,
 AND THE VERTEX $(-\frac{b}{2a}, f(-\frac{b}{2a}))$
 x, y

(EX) #2 PG 525 GRAPH $y = -x^2 + 4x - 1$
 SF ✓ $a = \ominus \swarrow \searrow$ $x = \frac{-(4)}{2(-1)} = 2 = \text{AOS}$

$y = f(x) =$

x	$-x^2 + 4x - 1$	
* 2	$-4 + 8 - 1 = 3$	$(2, 3) = \text{Vertex}$
1	$-1 + 4 - 1 = 2$	
3	2	
0	-1	
4	-1	



- Homework ① Road 10-1
- ② Page 528 #1, 2, 3, 6, 9, 18