

Alg. 1 - BE MONDAY 2-9-09

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

⑥ The quadratic function in standard form $y = f(x) = ax^2 + bx + c$ graphs to a parabola. The vertical line that is the AOS (Axis of symmetry) is where x is stuck on what?
 $x = ?$

- Exam 1 Return/Review
- Any Tutor Tickets for Today?
- Congratulations to Freddy & Phil!

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

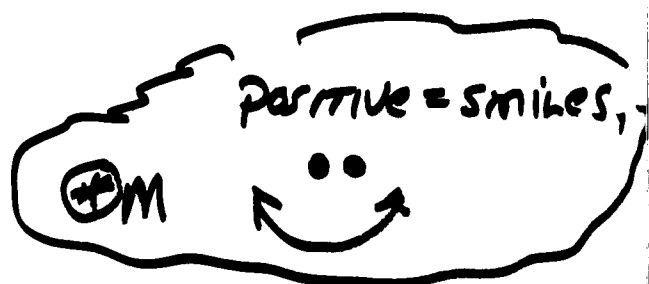
Ex 1 $y = 2x^2 - 4x - 5$

① Put in STANDARD form ✓

$$a = 2$$

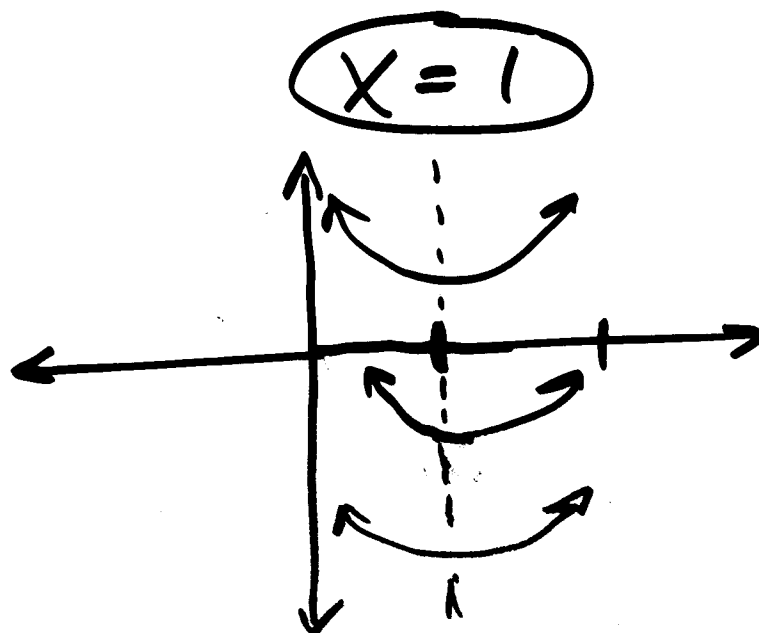
$$b = -4$$

$$c = -5$$



② If a is $\oplus$ $\curvearrowright$ parabola opens up
If a is $\ominus$ $\curvearrowleft$ parabola opens down

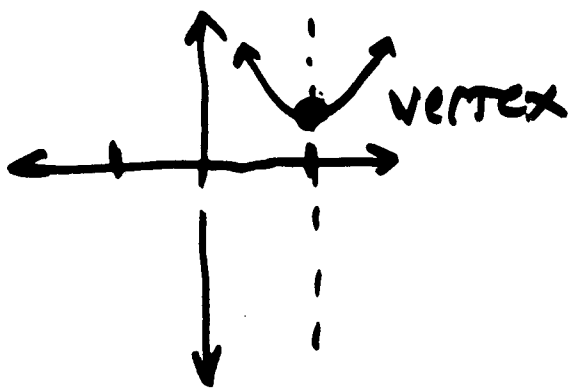
③ AOS $\Rightarrow x = -\frac{b}{2a} = -\frac{(-4)}{2(2)} = \frac{4}{4} = 1$



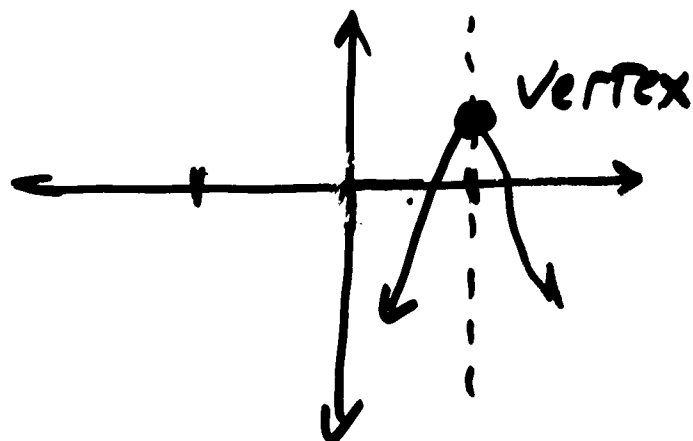
The lowest or highest point on the parabola is called the vertex.

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

since it is on the AOS



Vertex is minimum
for $\curvearrowright$ parabola



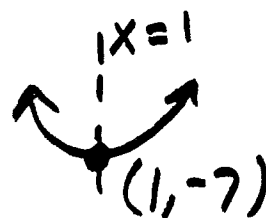
Vertex is maximum
for $\curvearrowleft$ parabola

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

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

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

$$f(2) = 2 - 4 - 5 = -7 \therefore \text{Vertex is AT}$$



(1, -7)

Big ADVANTAGE ON T-Table now you know AOS 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

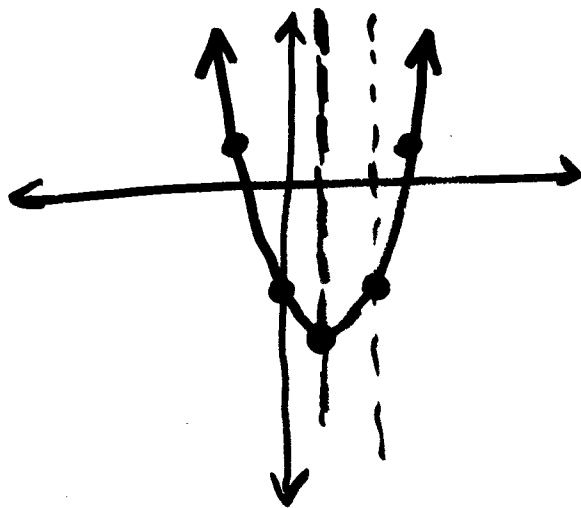
ONE POINT GETS YOU 2!

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

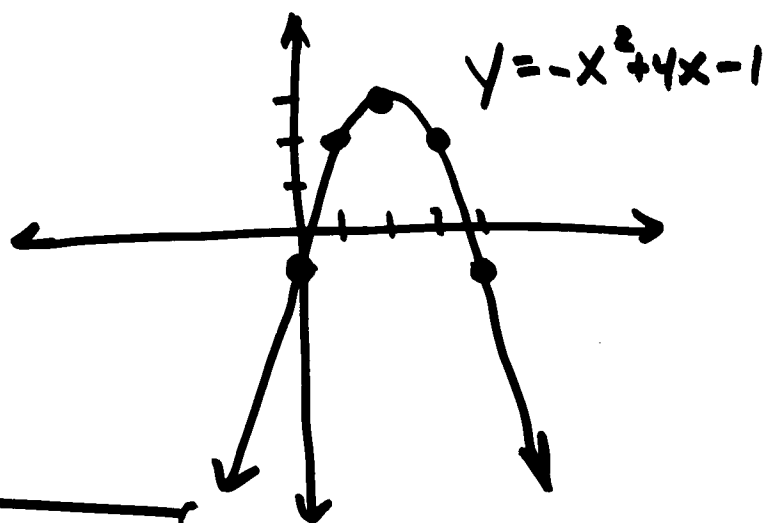


Summary of Graphing Parabolas
 using a "SMART T-TABLE" AND
 THE PROPERTIES OF SYMMETRY, $a \oplus$ up/down, $a \ominus$
 AND THE VERTEX $(-\frac{b}{2a}, f(-\frac{b}{2a}))$
 x, y

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

$$y = f(x) =$$

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