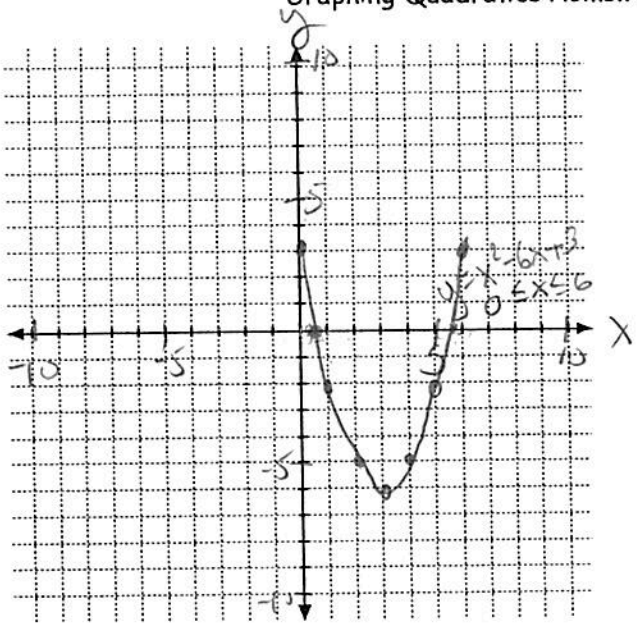
Name Key
8A; Algebra 1

Date _____
Period _____

# Graphing Quadratics Homework




1.) a) Draw the graph of the equation $y = x^2 - 6x + 3$ including all values of $x$ such that $0 \leq x \leq 6$.

b) Which two consecutive integers is the smaller root between?

$x = .5$

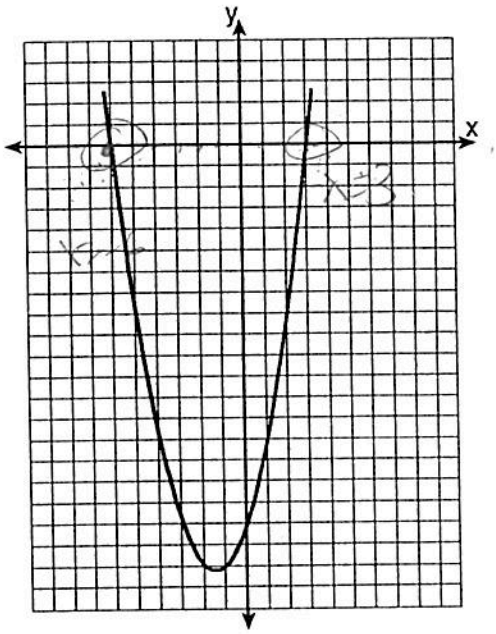
a)

| X | Y |
|---|---|
| 0 | 3 |
| 1 | -2 |
| 2 | -5 |
| 3 | -6 |
| 4 | -5 |
| 5 | -2 |
| 6 | 3 |

b) 0 & 1 $x = 5.5$

D: $0 \leq x \leq 6$ or $[0, 6]$
R: $-6 \leq y \leq 3$ or $[-6, 3]$

2) The graph of a quadratic equation is shown below. The scale on the axes is a unit scale. Write an equation of this graph in standard form.




$f(x) = x^2 + 3x - 18$
or
$y = x^2 + 3x - 18$

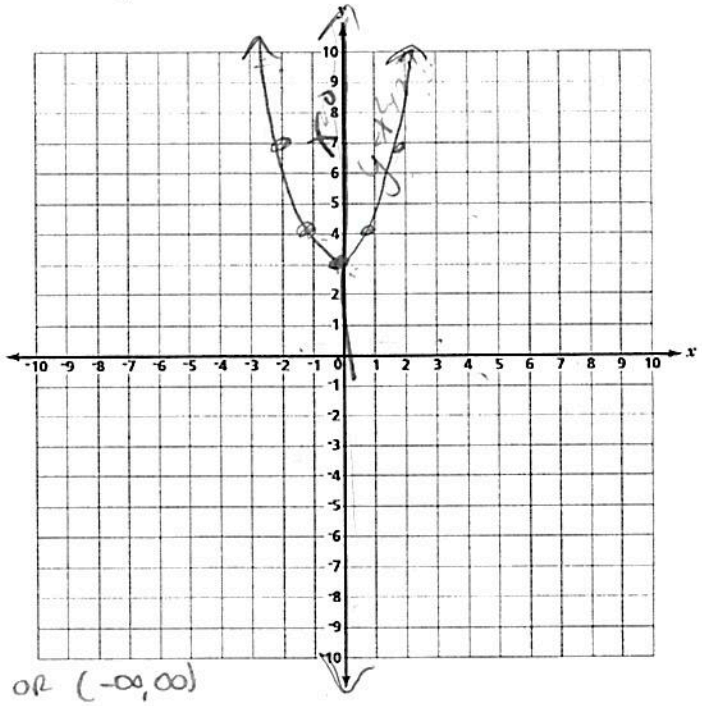
$x^2 + 3x - 18 = 0$
$x^2 - 3x + 6x - 18 = 0$
$(x + 6)(x - 3) = 0$
$x = -6$ | $x = 3$
$y = 0$

**Example 3:**

Sketch the graph of $y = x^2 + 3$

a = 1 b = 0 c = 3

| X | Y |
|---|---|
| -2 | 7 |
| -1 | 4 |
| 0 | 3 |
| 1 | 4 |
| 2 | 7 |



Vertex: (0, 3)

AOS: X = 0

Roots: No real roots (imaginary)

Opens: Up b/c $+x^2$

D: all reals or $(-\infty, \infty)$

R: $y \geq 3$ or $[3, \infty)$

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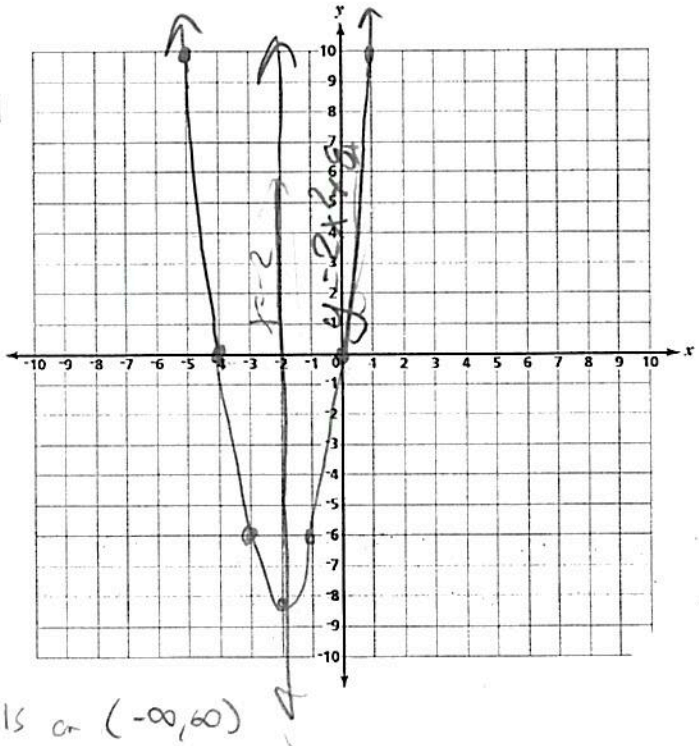
**Example 4:**

Sketch the graph of $y = 2x^2 + 8x$ by filling in the table below

a = 2 b = 8 c = 0

| x | -5 | -4 | -3 | -2 | -1 | 0 | 1 |
|---|---|---|---|---|---|---|---|
| y | 10 | 0 | -6 | -8 | -6 | 0 | 10 |



Vertex: (-2, -8)

AOS: X = -2

Roots: X = -4, X = 0 or {-4, 0} ~~(-4, 0)~~

Opens: Up b/c $+x^2$

D: all reals or $(-\infty, \infty)$

R: $y \geq 8$ or $[-8, \infty)$