Name: **Key** Date:_____ Pd:_____

2.2 QUAD BASICS: Graphing Parabolas DAY TWO CYU

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Graphing Quadratics (5 points)	1 - 6		
Vertex	3, 4, 5	1, 2, 6	
Axis of Symmetry	3, 4, 5	1, 2, 6	
Minimum/Maximum Value	3, 4, 5	1, 2, 6	
Increasing/Decreasing	3, 4, 5	1, 2, 6	
Domain/Range	1 – 6		
x-intercept(s), roots, zeros, solutions	1 - 6	1 - 6	1 - 6
intercept	1 - 6		
Opens Up/Down	1 - 6		
Creating a t-chart	1 - 6		

1. $y = 2x^2 - 2$

y-intercept: **(0, -2)**   Vertex: **(0, -2)**

Roots (x-intercepts): **$x = \pm 1$ $(\pm 1, 0)$**

Max or (Min) Value: **-2**

Axis of Symmetry: **$x = 0$**

Opens (Up) or Down

Domain: **$(-\infty, \infty)$**

Range: **$[-2, \infty)$**

Increasing: **$(0, \infty)$**

Decreasing: **$(-\infty, 0)$**

x	y
-2	6
-1	0
0	-2
1	0
2	6

2. $y = -6x^2 + 6$

y-intercept: $(0,6)$ Vertex: $(0,6)$

Roots (x-intercepts): $x = \pm 1$ $(\pm 1, 0)$

Max or Min Value: 6
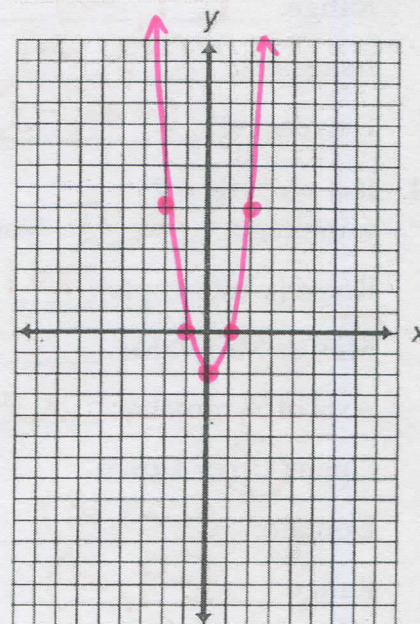
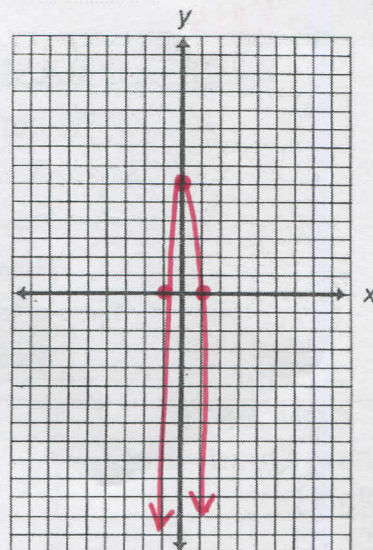Axis of Symmetry: $x = 0$

Opens Up or **Down**

Domain: $(-\infty, \infty)$

Range: $(-\infty, 6]$

Increasing: $(-\infty, 0)$

Decreasing: $(0, \infty)$

x	y
-2	-18
-1	0
0	6
1	0
2	-18

3. $f(x) = x^2 + 6x + 5$

y-intercept: $(0,5)$ Vertex: $(-3, -4)$

Roots (x-intercepts): $x = 5, -1$ $(-5, 0)(-1, 0)$

Max or **Min** Value: -4

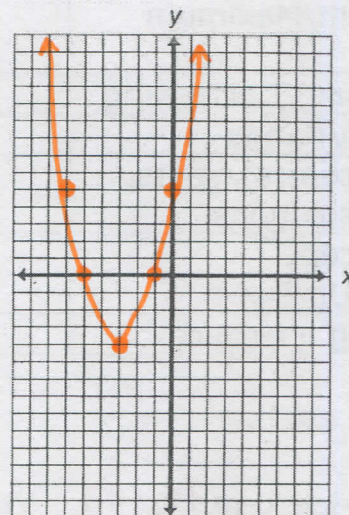Axis of Symmetry: $x = -3$

Opens **Up** or Down

Domain: $(-\infty, \infty)$

Range: $[-4, \infty)$

Increasing: $(-3, \infty)$

Decreasing: $(-\infty, -3)$

x	y
-5	0
-4	-3
-3	-4
-2	-3
-1	0

4. $f(x) = x^2 - 8x + 7$

y-intercept: $(0, 7)$ Vertex: $(4, -9)$

Roots (x-intercepts): $x = 1, 7$ $(1, 0)(7, 0)$

Max or **Min** Value: -9

Axis of Symmetry: $x = 4$

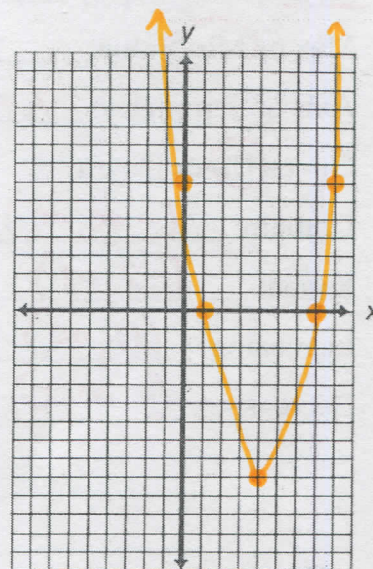Opens **Up** or Down

Domain: $(-\infty, \infty)$

Range: $[-9, \infty)$

Increasing: $(4, \infty)$

Decreasing: $(-\infty, 4)$

x	y
2	-5
3	-8
4	-9
5	-8
6	-5

5. $y = x^2 - 10x + 21$

y-intercept: (0,21)   Vertex: (5,-4)

Roots (x-intercepts): $X = 3,7$ (3,0) (7,0)

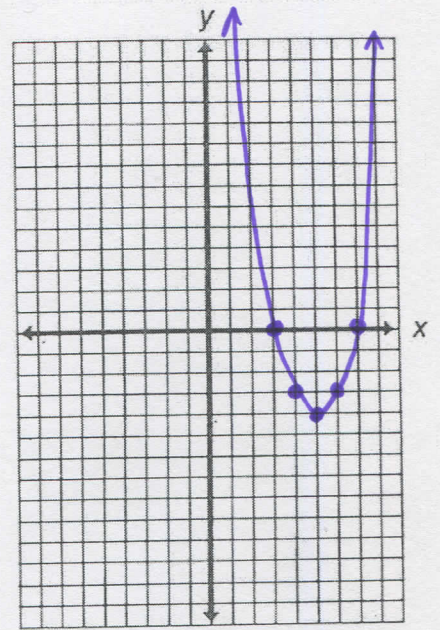Max or (Min) Value: -4

Axis of Symmetry: $X = 5$

Opens (Up) or Down

Domain: $(-\infty, \infty)$

Range: $[-4, \infty)$

Increasing: $(5, \infty)$

Decreasing: $(-\infty, 5)$

x	y
3	0
4	-3
5	-4
6	-3
7	0

6. $f(x) = -2x^2 + 8x + 7$

y-intercept: (0,7)   Vertex: (2,15)

Roots (x-intercepts): $X = \dfrac{4 \pm \sqrt{30}}{2}$ $\left(\dfrac{4 \pm \sqrt{30}}{2}, 0\right)$
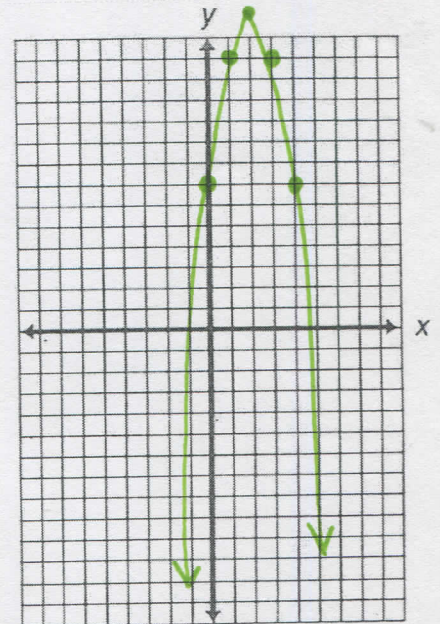
(Max) or Min Value: 15

Axis of Symmetry: $X = 2$

Opens Up or (Down)

Domain: $(-\infty, \infty)$

Range: $(-\infty, 15]$

Increasing: $(-\infty, 2)$

Decreasing: $(2, \infty)$

x	y
0	7
1	13
2	15
3	13
4	7

CYU Reflection: *How far can you go: basic, intermediate, or advanced?*
Rate your mastery level!
How confident are you with the skills this CYU covered? Circle the score you would give
yourself.

| 1 2 | 3 4 5 | 6 7 | 8 |
| Basic | Intermediate | Advanced | Solved ALL! |