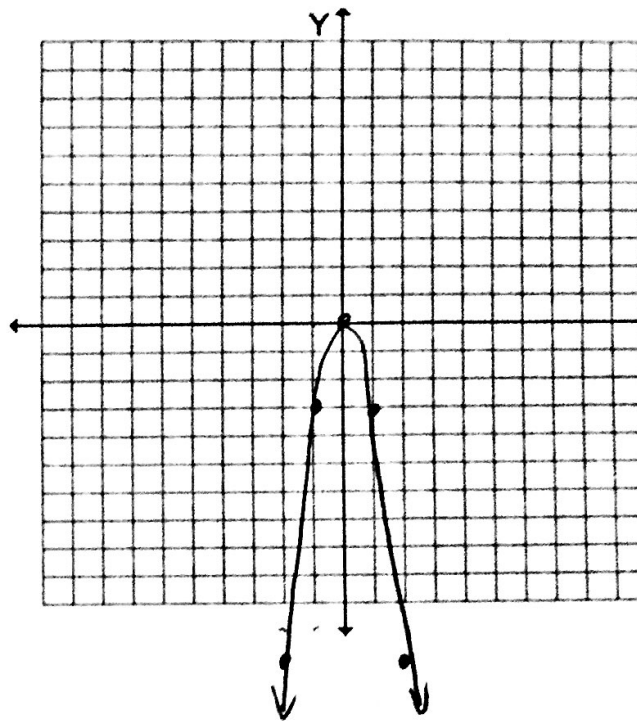


Station 1:

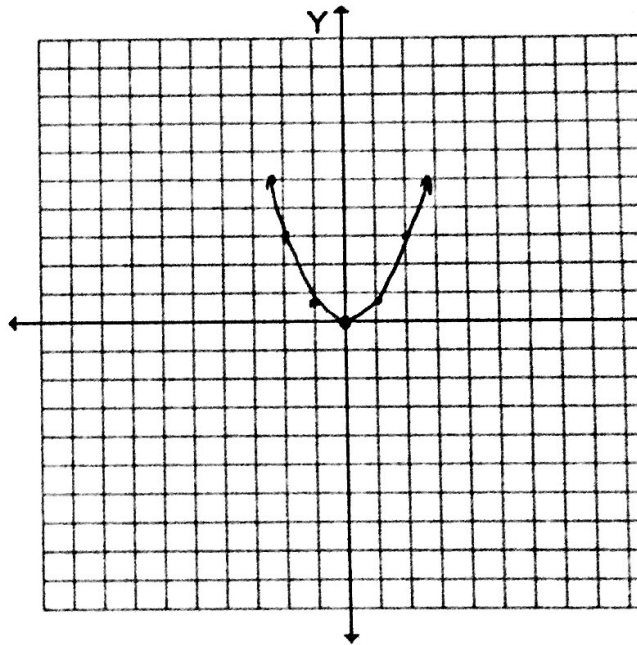
1) $y = -3x^2$

x	y
-2	-12
-1	-3
0	0
1	-3
2	-12



2) $y = \frac{3}{4}x^2$

x	y
-2	3
-1	$\frac{3}{4}$
0	0
1	$\frac{3}{4}$
2	3



Station 2:

3. Equation $y = -3x^2$

Vertex: (0, 0)

Axis of symmetry $x = 0$

Wider or Narrower? Explain. $a > 1$

For $x < 0$ is the graph increasing or decreasing?

For $x > 0$ is the graph increasing or decreasing?

4. Equation: $y = \frac{3}{4}x^2$

Vertex: $(0, 0)$

Axis of symmetry $x = 0$

Wider or Narrower? Explain. $a < 1$

For $x < 0$ is the graph increasing or decreasing?

For $x > 0$ is the graph increasing or decreasing?

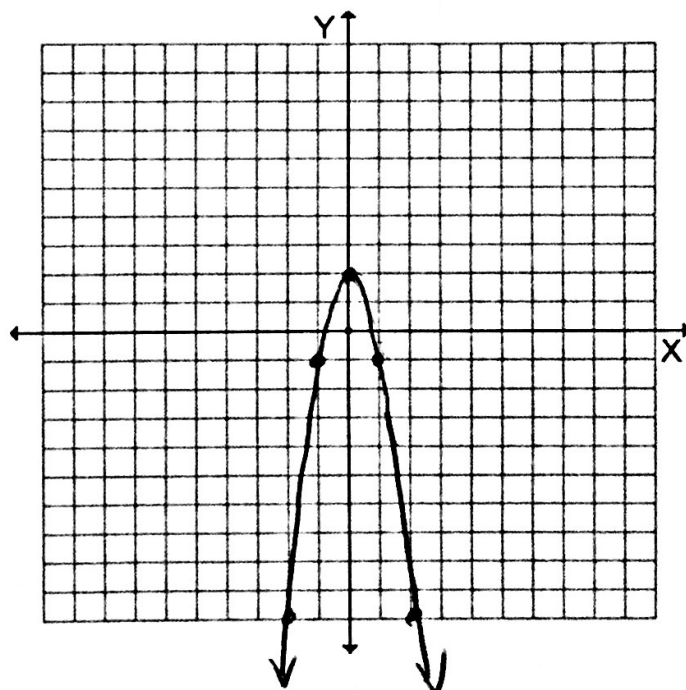
5. $|a| < 1$ wider

6. $|a| > 1$ narrower, reflected over x-axis, vertical translation down 2.

Station 3:

7. $y = -3x^2 + 2$

x	y
-2	-10
-1	-1
0	2
1	-1
2	-10



• Vertex: $(0, 2)$ Axis of symmetry: $x = 0$

• Is the vertex a maximum or minimum?

• Use the graph to estimate the zeros of the equation. $x = .75$ and $x = -.75$

• Use the graph to identify the domain and range for the equation.

Domain: \mathbb{R}

Range: $y \leq 2$

8. $X = -2, X = 2$

9. $X = -3, X = 3$

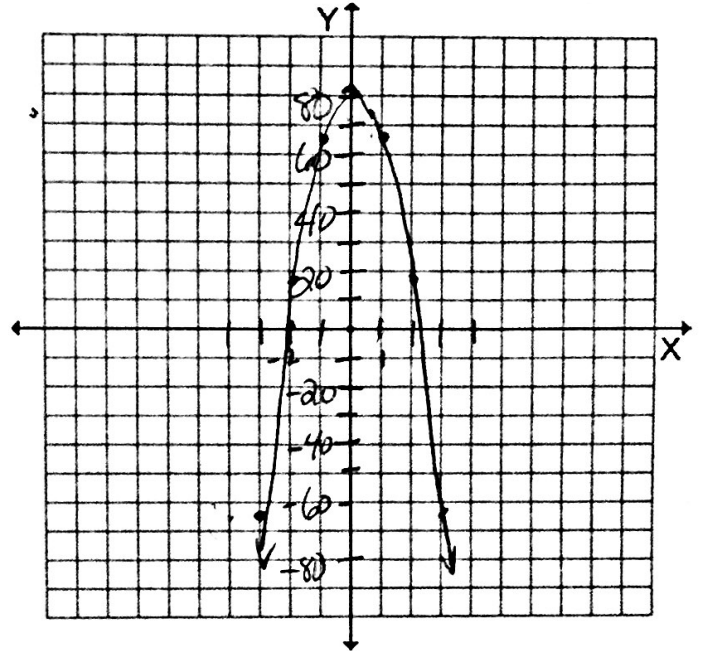
Station 4:

10. $y = -16x^2 + 81$

x-intercept: $X = \frac{9}{4}, X = -\frac{9}{4}$
 (or -2.25 and 2.25)

y-intercept: 81

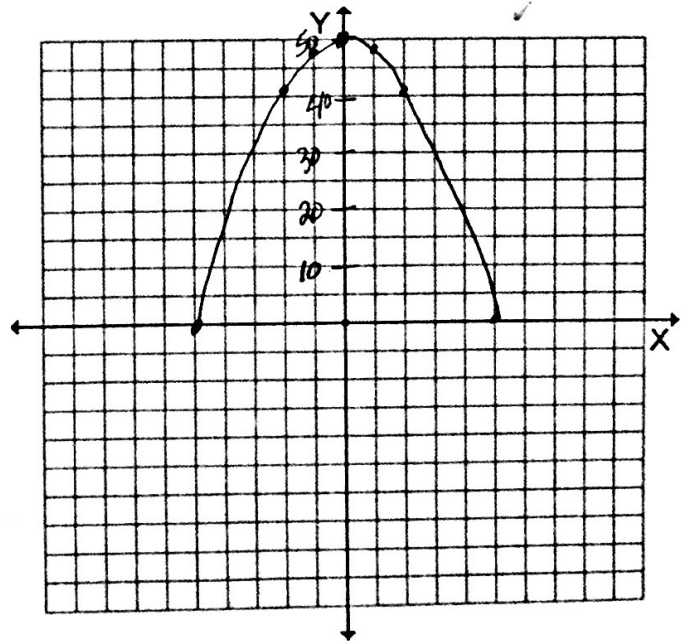
x	y
-2	17
-1	65
0	81
1	65
2	17
3	-63



11. $y = -2x^2 + 50$

Width: 10 feet

x	y
-2	42
-1	48
0	50
1	48
2	42
5	0
(-5 0)	



Station 5:

12. $y = 3x^2 - 6x + 2$

$$x = -\frac{b}{2a}$$

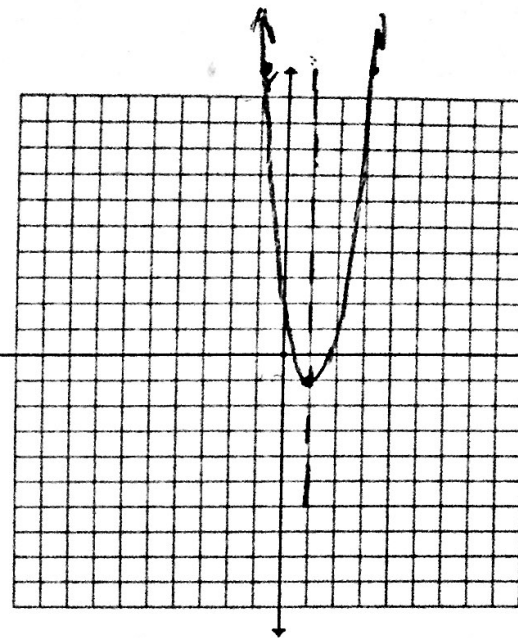
Domain: \mathbb{R}

$$x = \frac{6}{2(3)} = 1$$

Range: $y \geq -1$

vertex: minimum

x	y
-1	11
1	-1
3	11



13. $y = -4x^2 - 12x + 1$

$$x = -\frac{b}{2a}$$

Domain: \mathbb{R}

$$x = \frac{12}{-4(2)}$$

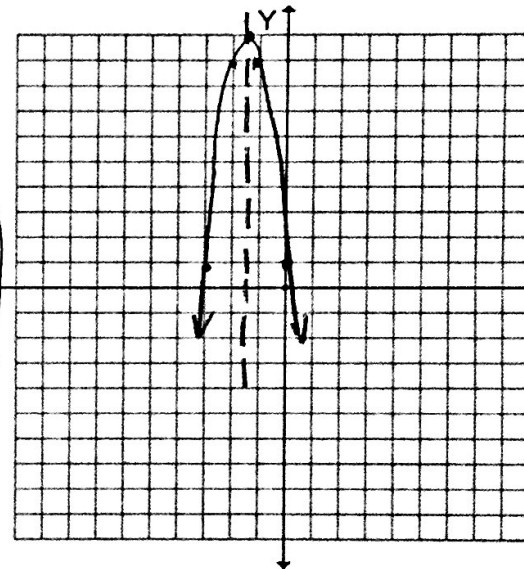
Range: $y \leq 10$

$$x = -\frac{12}{8}$$

$$x = -1.5$$

vertex: maximum

x	y
-3	1
-2	9
-1.5	10
-1	9
0	1



14. Axis of symmetry: $x = 2$

Increasing: for $x > 2$

Decreasing: for $x < 2$

Station 6:

15. Minimum or maximum? $(-1, +8)$

16. Minimum or maximum? $(-2, 14)$

17. minimum $(-2, -3)$

18. maximum $(-1, 3)$