Station 1 Find the Y-intercept, Equation for LOS, and Coordinates of the Vertex.

a) $y = 3x^2 - 36x + 7$

b) $y = -2x^2 + 24x$

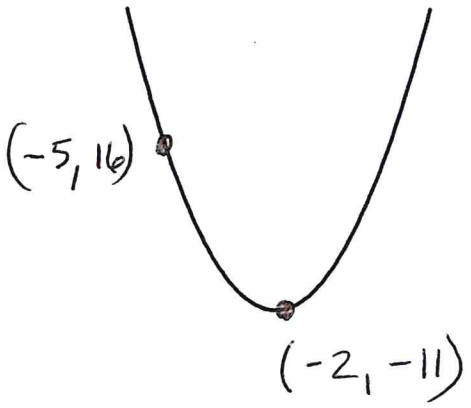
c) $y = 10x^2 + 6$

Station 2 Find the Y-intercept, Equation for LOS, and Coordinates of the Vertex.

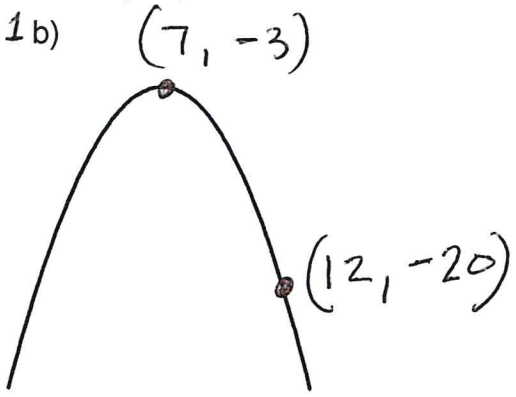
$y = 5(x - 2)^2 + 7$

Station 3 Write the equation of each graph in Vertex Form

1 a)



1 b)



Station 4 Graph each parabola using at least five points. Make sure you include the vertex and the Line of Symmetry

1 a) $y = -x^2 + 4x + 3$

1 b) $y = 2(x + 1)^2 - 5$

Station 5

1. Factor each Completely.

a) $5x^3 - 10x^2 - 120x$

b) $16x^2 - 121$

c) $3x^5 - 48x$

2. Solve each by factoring.

a) $12x^2 - 5x = 3$

b) $12x^2 + 21x = 0$

Station 6

1. An object is shot into the air. The following function gives the height of the ball as a function of its time in the air. $h(t) = -16t^2 + 80t + 70$

a) Find the time it takes the ball to reach the ground.

b) Find the time it takes the ball to reach a height of 100 feet.

2. The expenses of a certain company are a function of the number of pieces they manufacture. The following function gives the Expenses as a function of how many pieces they manufacture.

$E(p) = 300x^2 - 1200x + 9000$

a) Find the numbers of pieces they must manufacture in order to minimize their expenses.

b) What are the minimum expenses?

Station 7

Simplify each.

1. $\sqrt{-240}$

2. $(7-\sqrt{-16})-(12+\sqrt{-4})$

3. $(6+7i)(4-3i)$

4. $(8+5i)(8-5i)$

Station 8

Find all real and imaginary solutions by using square roots. Simplify answers.

1. $(x+5)^2+91=55$

2. $7-3x^2=79$

Station 9 Find all real and imaginary solutions using the Quadratic Formula. Give real solutions rounded to the nearest hundredth. Simplify imaginary solutions.

1. $3x^2 - 8x = 7$
2. $4x^2 - 16x + 25 = 0$

Station 10 Find all real and imaginary solutions by completing the square. Simplify answers.

1. $x^2 + 6x + 58 = 0$
2. $2x^2 - 12x + 30 = 0$

Chapter 5 Review - Stations ANSWERS

Station 1 a) $y = 3x^2 - 36x + 7$ $LOS: x = 6$ $Vertex: (6,-101)$ $y-int = 7$

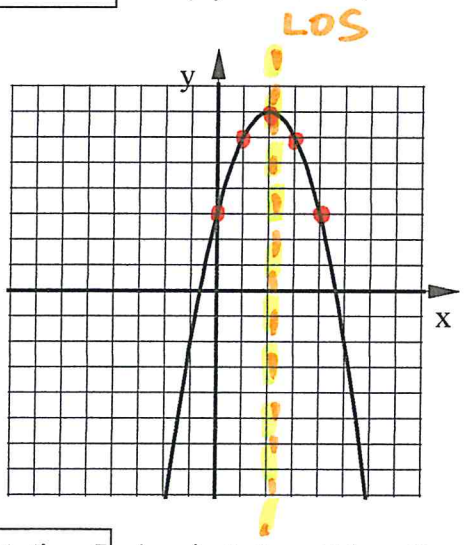
b) $y = -2x^2 + 24x$ $LOS: x = 6$ $Vertex: (6,72)$ $y-int = 0$

c) $y = 10x^2 + 6$ $LOS: x = 0$ $Vertex: (0,6)$ $y-int = 6$

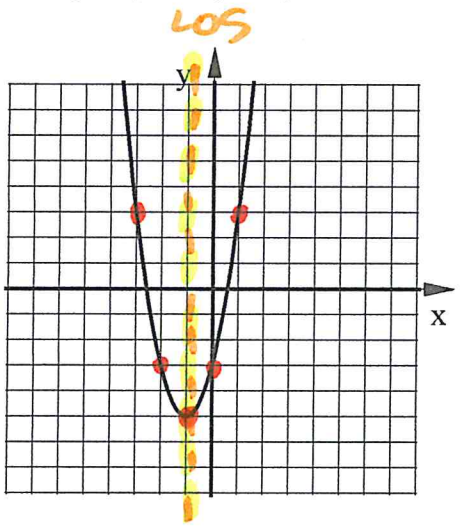
Station 2 $y = 5(x-2)^2 + 7$ $LOS: x = 2$ $Vertex: (2,7)$ $y-int = 27$

Station 3 a) $y = 3(x+2)^2 - 11$ b) $y = -\frac{17}{25}(x-7)^2 - 3$

Station 4 a) $y = -x^2 + 4x + 3$



b) $y = 2(x+1)^2 - 5$



Station 5 1. a) $5x(x+4)(x-6)$ b) $(4x \pm 11)$ c) $3x(x \pm 2)(x^2+4)$

2. a) $x = \frac{3}{4}, -\frac{1}{3}$ e) $x = -\frac{7}{4}, 0$

Station 6 1. a) Time it takes the ball to reach the ground. $t = 5.76$ sec

b) Time it takes the ball to reach a height of 100 feet. $t = 0.41$ & 4.59 sec

2. a) 2 pieces will minimize their expenses. b) Minimum expenses are 7800

Station 7 1. $4i\sqrt{15}$ 2. $-5-6i$ 3. $45+10i$ 4. 89

Station 8 1. $x = -5 \pm 6i$ 2. $x = \pm 2i\sqrt{6}$

Station 9 1. $x = -0.69, 3.36$ 2. $x = \frac{4 \pm 3i}{2}$

Station 10 1. $-3 \pm 7i$ 2. $x =, 3 \pm i\sqrt{6}$