Algebra 2 - Quadratic Regression and Modeling Quiz Review Stations Name: _____

STATION 1

a) x = y =

b)

c)

d)

STATION 3

a) x = y =

b)

c)

d)

STATION 2

a) x = y =

b)

c)

d)

e) DOMAIN: RANGE:

f) Draw your sketch on the back of this paper.

STATION 4

a) x = y =

b)

c)

d)

e) DOMAIN: RANGE:

f) Draw your sketch on the back of this paper.

STATION 1 STATION 1 STATION 1

1) The table below shows the relationship between speed, measured in miles per hour, and the fuel economy, measured in miles per gallon, for a new car.

Speed	15	20	25	30	35	45	55	60	70
Fuel Economy	22.3	25.5	27.5	29	28.8	29.9	30.4	28.8	25.3

a) Define Variables: x = y =

b) Find a quadratic function to model the data.

c) Predict the fuel economy of a car that travels at a speed of 65 miles per hour.

(Answer must be in sentence form)

d) If you found the fuel economy of a car was 24 miles per gallon predict the speed(s) that the car is traveling at.

(Answer must be in sentence form)

STATION 2 STATION 2 STATION 2

A juggler throws a ball into the air from the ground. The relation between its height, *h*, in feet and the time from launch, *t*, in seconds can be described by the equation $h = -16t^2 + 15t$.

a) Define Variables: x = y=

b) What is the maximum height that the ball will reach?

(Answer must be in sentence form)

c) At what time will the ball reach the maximum height?

(Answer must be in sentence form)

d) How long is the ball in the air ?

(Answer must be in sentence form)

e) What is a reasonable domain and range for this model?

f) Sketch and label a graph to model this scenario.

STATION 3 STATION 3 STATION 3

The table below shows the relationship between the age and blood pressure for a group of people who recently donated blood.

Age	24	26	34	35	37	41	48	50	55
Blood Pressure	108	104	119	128	121	132	140	135	146

a) Define Variables: x = y =

b) Find a quadratic function to model the data.

c) Predict the blood pressure of a 15 year old.

(Answer must be in sentence form)

d) If a person has a blood pressure of 130, predict their age.

(Answer must be in sentence form)

STATION 4 STATION 4 STATION 4

The Empire State Building is 1250 feet tall. If an object is thrown upward from the top of the building at an initial velocity of 38 feet per second, its height *s* seconds after it is thrown is given by the equation $h = -16s^2 + 38s + 1250$.

a) Define Variables: x = y =

b) What is the maximum height that the object will reach?

(Answer must be in sentence form)

c) After how many seconds will the object reach the maximum height?

(Answer must be in sentence form)

d) How long is the object in the air ?

(Answer must be in sentence form)

e) What is a reasonable domain and range for this model?

f) Sketch and label a graph to model this scenario.