MA30 APPLIED (GRADE 11 APPLIED)
REGRESSION USING THE
DESMOS GRAPHING CALC

Name: __________
Date: __________

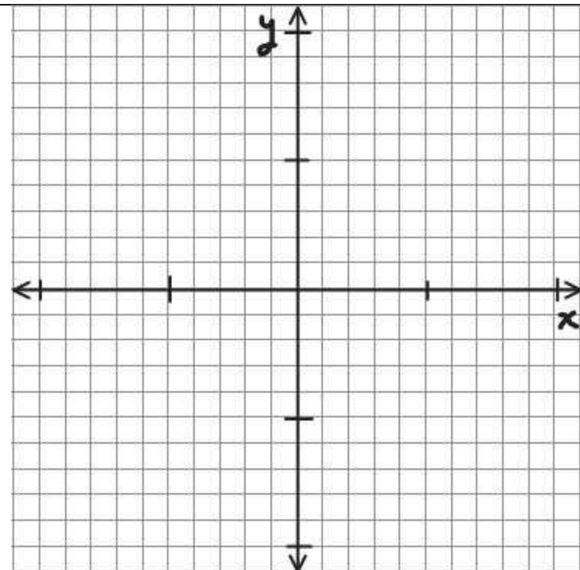
Given the following data points of a quadratic function that you know are on a parabola, graph the points as a scatterplot on the blank grid provided. Then perform a regression with the Desmos Graphing Calculator by entering the data points in a table. Record the function that the dots best represent.

1.

x	-2	-1	0	1	2
y	4	1	0	1	4

R^2 is:

The quadratic equation is; y =



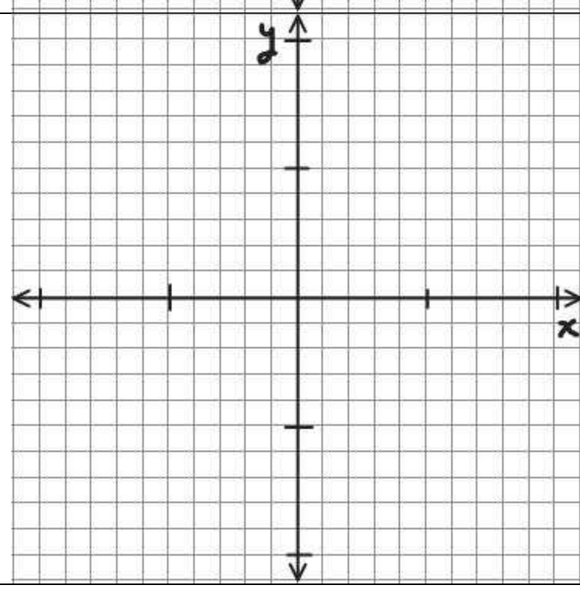
2.

f(x)	0	3	4	5	8
y	4	19	20	19	4

R^2 is:

The quadratic equation is;

f(x) =



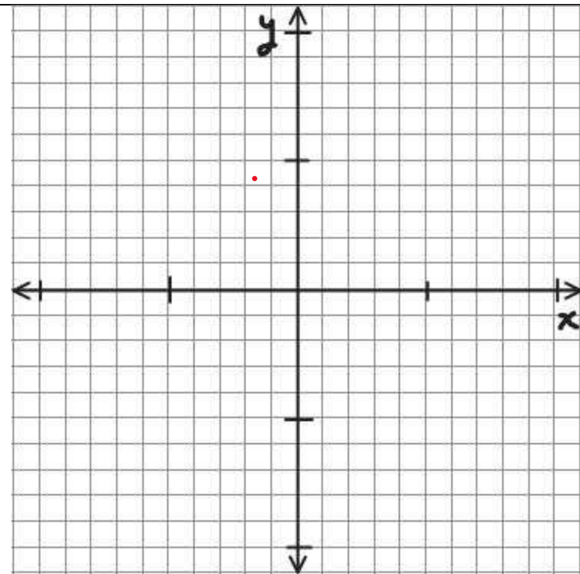
If given proper graph grid plot the points accurately. You likely need to scale the grid!

3.

x	0	2	3	4	5
y	2	-12	-15	-16	-15

R^2 is:

The quadratic equation is; y =



4.

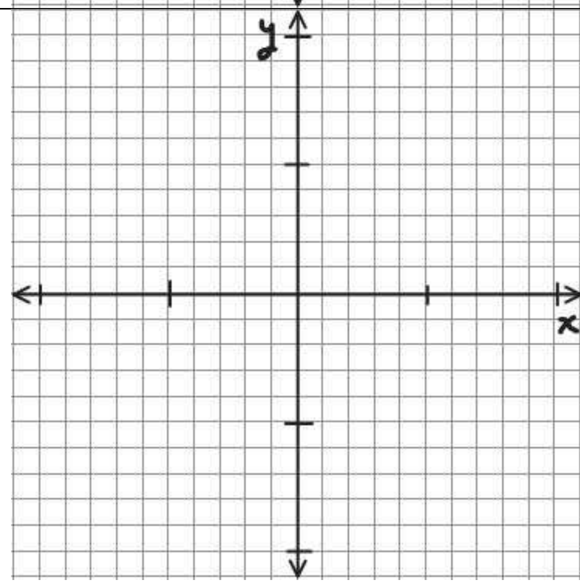
x	0	1	2	3
y	31	11	-1	-5

R^2 is:

The quadratic equation is;

y =

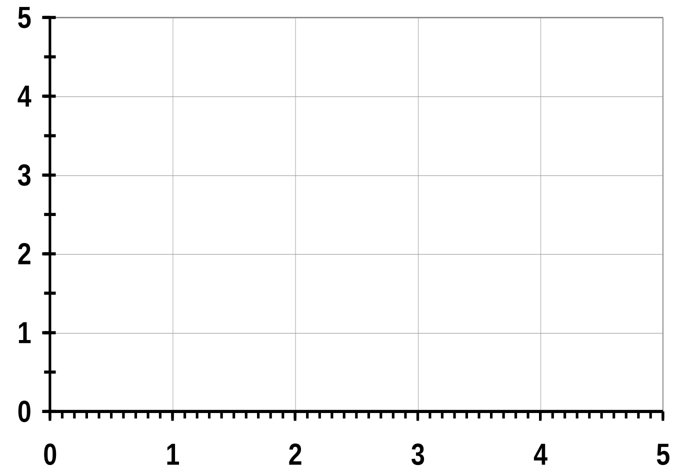
**You need at least three data points to do a quadratic regression*



5. Dave is trying to calculate the equation for falling bodies (on earth). He knows the curve for height as a function of time is quadratic, the more time they spend falling the faster they go! From the roof of the College, he measures with a stop watch the following data:

Time (secs)	**0**	**1.1**	**2.0**	**3.1**
Height (m)	**45**	**38.4**	**26.4**	**0**

a. plot and graph your **data plot** (the observed data points) *and* the resultant **function graph** to the right.



b. what is your equation for bodies falling on the earth and is it a good fit? (of course the calculator uses **y**'s and **x**'s, you use **h**'s and **t**'s).

h(t) =

Below are three more you can do for fun! Optional! [Recommended]

6.

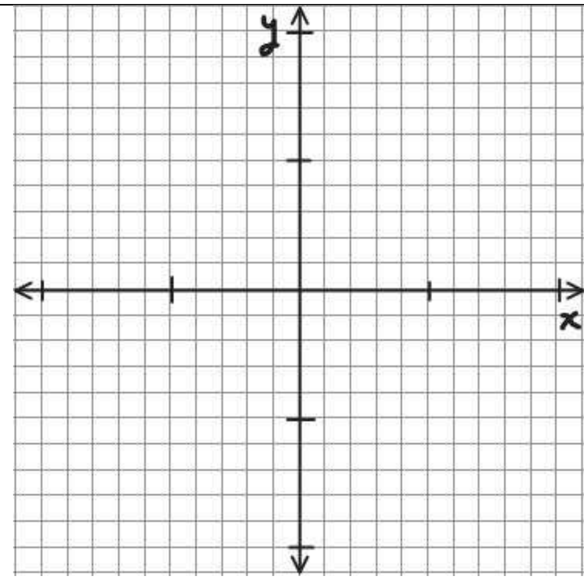
x	0	1	2	3	4
y	2	27	42	47	42

R^2 is:

The quadratic equation is;

y =

A baseball trajectory! Height is a function of elapsed time since it was thrown up



7.

v	15	30	60	120
d	4.5	17.4	68.2	295

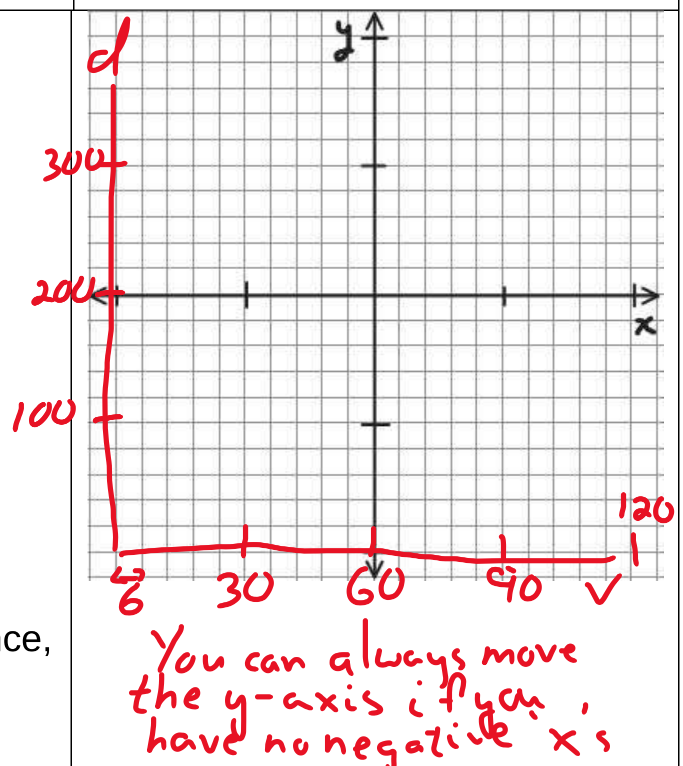
R^2 is:

The quadratic equation is;

d =

For what ‘v’ does d = 50?

**The observed stopping distance, d in m, for a given velocity, v in km/h, on a wet road



8. This one I want a ‘**cubic**’, something with an exponent of 3.

x	-5	-4	0	2	5
y	**0**	**6.4**	**0**	**-5.6**	**10**

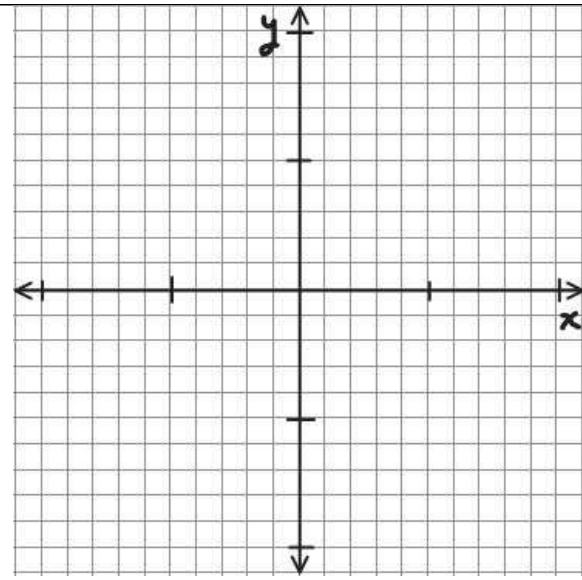
R^2 is:

The ‘**cubic**’ equation is;

y =

For what x does y = 2.5?

wild



a cubic function has form:
$y = ax^3 + bx^2 + cx + d$