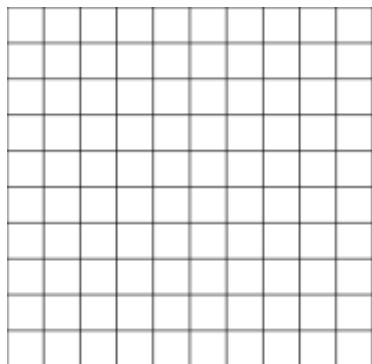


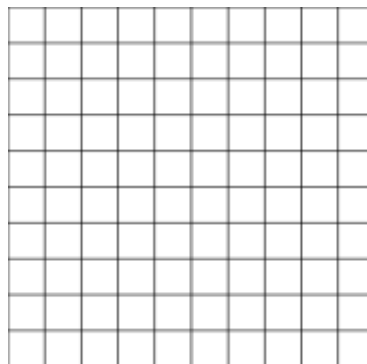
Linear, Quadratic and Exponential Models Assignment

Graph each set of points and determine which model best represents the data set.

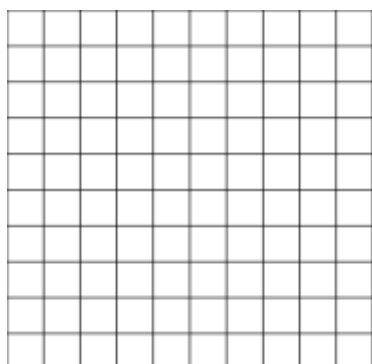
1. $(-1,-1)$, $(-2,-2)$, $(-3,-3)$, $(-4,-4)$



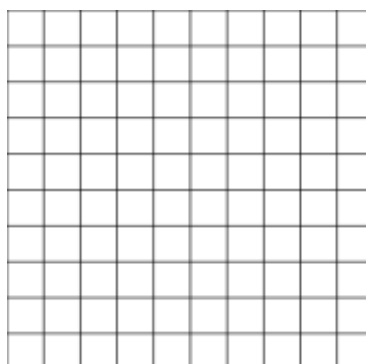
2. $(0,3)$, $(1,1)$, $(2,0)$, $(3,1)$



3. $(0,-2)$, $(1,-4)$, $(2,-8)$, $(3,-16)$



4. $(0,1)$, $(1,1.5)$, $(2,3)$, $(3,5.5)$, $(-1,1.5)$



Linear, Quadratic and Exponential Models Assignment

Which model best describes the data in each table given below?

1.

x	y
-2	12
-1	6
0	3
1	1.5
2	0.75

2.

x	y
1	5
2	9
3	13
4	17
5	21

3.

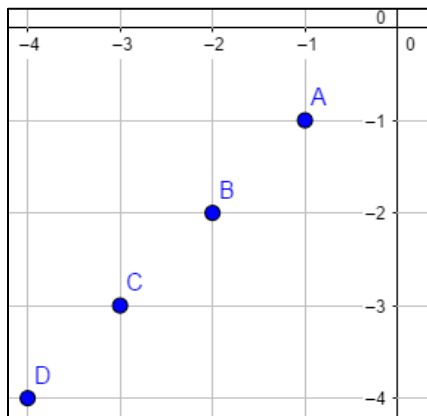
x	y
0	0
1	-2
2	-8
3	-18
4	-32

Linear, Quadratic and Exponential Models Assignment

ANSWERS:

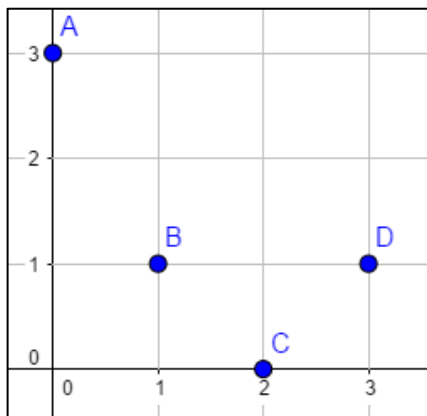
Graph each set of points and determine which model best represents the data set.

1. $(-1,-1)$, $(-2,-2)$, $(-3,-3)$, $(-4,-4)$



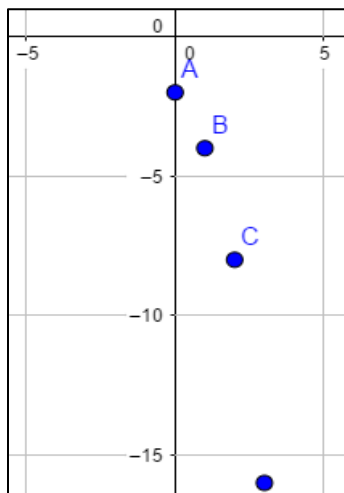
The graph represents a **linear model** since the points make a straight line.

2. $(0,3)$, $(1,1)$, $(2,0)$, $(3,1)$



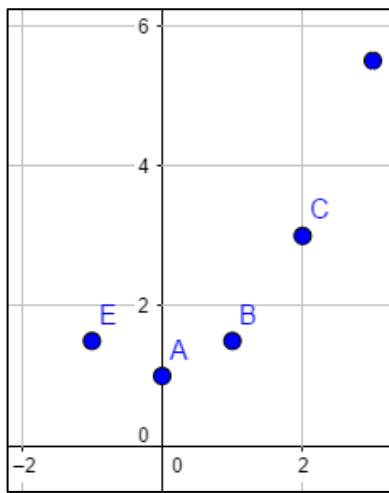
The graph represents a **quadratic model** since the points make a U shaped curve.

3. $(0,-2)$, $(1,-4)$, $(2,-8)$, $(3,-16)$



The graph represents an **exponential model** since the points make a decreasing curve.

4. $(0,1)$, $(1,1.5)$, $(2,3)$, $(3,5.5)$, $(-1,1.5)$



The graph represents a **quadratic model** since the points make a U shaped curve.

Linear, Quadratic and Exponential Models Assignment

Which model best describes the data in each table given below?

1.

x	y
-2	12
-1	6
0	3
1	1.5
2	0.75

The ratio of consecutive y-values is: $\frac{12}{6} = \frac{6}{3} = 2$

So the table represents an **exponential model**.

2.

x	y
1	5
2	9
3	13
4	17
5	21

The difference between consecutive y-values is: $9 - 5 = 13 - 9 = 4$

So the table represents a **linear model**.

Linear, Quadratic and Exponential Models Assignment

3.

x	y
0	0
1	-2
2	-8
3	-18
4	-32

The difference between differences of y values is:

$$0 - (-2) = 2 ; -2 - (-8) = 6 ; -8 - (-18) = 10$$

$$\rightarrow 2 - 6 = 10 - 6 = 4$$

So the table represents a **quadratic model**.