

Practice 10-9

Choosing a Linear, Quadratic, or Exponential Model

Which kind of function best models the data? Write an equation to model the data.

1. $(-1, 3), (1, 3), (3, 27), (5, 75), (7, 147)$

2. $(-2, 4), (-1, 2), (0, 0), (1, -2), (2, -4)$

3. $(-2, \frac{1}{16}), (-1, \frac{1}{4}), (0, 1), (1, 4), (2, 16)$

4. $(-6, -1), (-3, 0), (0, 1), (3, 2), (6, 3)$

5. $(-2, \frac{1}{3}), (-1, 1), (0, 3), (1, 9), (2, 27)$

6. $(-4, -32), (-2, -8), (0, 0), (2, -8), (4, -32)$

7.

x	y
-3	$\frac{9}{2}$
-2	2
-1	$\frac{1}{2}$
0	0

8.

x	y
-1	-2
0	-4
1	-6
2	-8

9.

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

10.

x	y
0	-2
1	-8
2	-32
3	-128

11.

x	y
-7	-245
-5	-125
-3	-45
-1	-5

12.

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

13. $(-2, \frac{1}{3}), (-1, \frac{1}{3}), (0, \frac{1}{3}), (1, \frac{1}{3}), (2, \frac{1}{3})$

14. $(-1, -\frac{1}{4}), (0, -\frac{1}{2}), (1, -1), (2, -2), (3, -4)$

15. The cost of shipping computers from a warehouse is given in the table below.

Number of Computers	50	75	100	125
Cost (dollars)	1700	2500	3300	4100

- Determine which kind of function best models the data.
 - Write an equation to model the data.
 - On the basis of your equation, what is the cost of shipping 27 computers?
 - On the basis of your equation, how many computers could be shipped for \$5500?
16. During a scientific experiment, the bacteria count was taken at 5-min intervals. The data shows the count at several time periods during the experiment.

Time Interval	0	1	2	3
Count	110	132	159	190

- Determine which kind of function best models the data.
- Write an equation to model the data.
- On the basis of your equation, what is the count 1 hr, 45 min after the start of the experiment?