

Warm Up

- Jenny invested \$1,500 that grows 3% each quarter. Set up a function to represent the amount of money after t years.
- How much money does Jenny have after one year?

8.3 Exponential Functions Continued...

The population of a sample of bacteria doubles every 5 minutes. Using a_0 to represent the initial population of the sample, Mike wrote the equation $a_t = a_0(2^{5t})$ to predict the population a_t after t minutes.

- a. Complete the table of values below using Mike's equation and use it to show that Mike's equation is incorrect.

Time	0 minutes	5 minutes
Population	70	

- b. Write an equation that will accurately predict the population a_t after t minutes of a sample of bacteria that doubles every 5 minutes.

The population of a sample of bacteria triples every 2 minutes. Using a_0 to represent the initial population of the sample, Jerry wrote the equation $a_t = a_0(3^{2t})$ to predict the population a_t after t minutes.

- a. Complete the table of values below using Jerry's equation and use it to show that Jerry's equation is incorrect.

Time	0 minutes	2 minutes
Population	40	

- b. Write an equation that will accurately predict the population a_t after t minutes of a sample of bacteria that triples every 2 minutes. (1 point)

The population of a sample of bacteria doubles every 10 seconds. Using a_0 to represent the initial population of the sample, Mike wrote the equation $a_t = a_0(2^{10t})$ to predict the population a_t after t seconds.

- a. Complete the table of values below using Mike's equation and use it to show that Mike's equation is incorrect.

Time	0 seconds	10 seconds
Population	7	

- b. Write an equation that will accurately predict the population a_t after t minutes of a sample of bacteria that triples every 10 seconds. (1 point)

Write an exponential function for the table.

x	0	1	2	3	4
y	3	6	12	24	48

Write an exponential function for the table.

x	0	3	6	9	12
y	14	28	56	112	224

Write an exponential function for the table.

x	0	1	2	3	4
y	288	144	72	36	18

Write an exponential function for the table.

x	0	5	10	15	20
y	256	128	64	32	16

Write an exponential function for the table.

y	27	54	108	216	432
x	0	2	4	6	8

Write an exponential function for the table.

y	96	48	24	12	6
x	0	1	2	3	4

Meghan is reviewing the change in the value of an investment.

Time (decades)	0	1	2	3
Value (\$1000s)	2	1	0.5	0.25

Is it exponential or linear?

How do you know?

Write a function that can be used to model this data.

Eric is reviewing the change in the value of an investment.

Time (decades)	0	1	2	3
Value (\$1000s)	3	2.5	2	1.5

Is it exponential or linear?

How do you know?

Write a function that can be used to model this data.

Shania is reviewing the change in the value of an investment.

Time (decades)	2	4	6	8
Value (\$1000s)	8	7	6	5

Is it exponential or linear?

How do you know?

Write a function that can be used to model this data.

Jose is reviewing the change in the value of an investment.

Time (decades)	1	2	3	4
Value (\$1000s)	4	2	1	0.5

Is it exponential or linear?

How do you know?

Write a function that can be used to model this data.