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Exponential Functions and Equations

20. Identifying Data that Display Exponential Behavior

 Lesson



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QUESTION 1



This table shows data that display exponential behavior. Which equation describes the data?

<i>x</i>	0	1	2	3
<i>y</i>	4	12	36	108



$$y = 3(4)^x$$



$$y = 4(3)^x$$



$$y = 3x + 4$$



$$y = 3x$$

QUESTION 2



A

x	0	2	4	6
y	8	12	16	20

B

x	2	3	4	5
y	8	32	128	512

C

x	10	12	14	16
y	10	9	8	7

D

x	-1	0	1	2
y	100	120	140	160

Which table has data that display exponential behavior?

☒ Table B 

☐ Table D

☐ Table C

☐ Table A

QUESTION 3



An amount of AED 8,000 was invested at 6% interest that is compounded yearly. The equation

$$A = 8,000(1.06)^t$$

represents the value

A

of the investment at time

t

years.

Find the worth of the investment when

$t = 7$

. Round your answer to the nearest thousand.

Enter your answer in the space provided.

The investment will be worth about AED

12000



after 7 years.

QUESTION 4



An amount of AED 1,000 was invested at 3% interest that is compounded yearly. The equation

$$A = 1,000(1.03)^t$$

represents the value

A

of the investment at time

t

years.

Find the worth of the investment when

$$t = 31$$

. Round your answer to the nearest hundred.

Enter your answer in the space provided.

The investment will be worth about AED

2500



after 31 years.

QUESTION 5



The population of a city can be represented by the equation

$$P = 24,000(0.97)^t$$

, where

P

is the population at time

 t

years.

Find the population when

 $t = 6$

. Round your answer to the nearest thousand.

Enter your answer in the space provided.

The population of the city will be about after 6 years.

QUESTION 6



The number of bacteria in a dish can be represented by the equation

$$y = 30(2)^t$$

, where

 y

is the number of bacteria in

 t

hours.

Select your answer drop-down menu.

After 5 hours there are bacteria

in the dish.



QUESTION 7



The population of a city can be **represented** by the equation

$$P = 90,000 (0.98)^t$$

, where

P

is the population at time

t

years.

Find the population when

$$t = 9$$

. Round your answer to the nearest thousand.

Enter your answer in the space provided.

The population of the city will be about

75000



after 9 years.

QUESTION 8



An amount of AED 3,000 was invested at 5% interest that is compounded yearly. The equation

$$A = 3,000 (1.05)^t$$

represents the value

A

of the investment at time

t

years.

Find the worth of the investment when

$$t = 23$$

. Round your answer to the nearest thousand.

Enter your answer in the space provided.

The investment will be worth about AED

9000



after 23 years.

QUESTION 9



A

x	0	1	2	3
y	10	12	14	16

B

x	2	3	4	5
y	8	19	10	11

C

x	21	22	23	24
y	7	6	5	4

D

x	0	1	2	3
y	2	10	50	250

Type the letter of the table.

Table

D



has data that display exponential behavior.

QUESTION 10



A

x	1	2	3	4
y	8	13	18	23

B

x	12	13	14	15
y	-2	-4	-6	-8

C

x	1	2	3	4
y	6	12	24	48

D

x	-1	0	1	2
y	5	6	7	8

Select your answer from the drop-down menu.

Table

C



has data that display exponential behavior.

QUESTION 11



Determine if the data in the table of values shows exponential growth, exponential decay, or neither.

x	3	4	5	6	7	8	
y	0.5	1	2	4	8	16	

Select your answer from the drop-down menu.

The data shows exponential growth ✓ ▼

QUESTION 12



Determine if the data in the table of values shows exponential growth, exponential decay, or neither.

x	4	5	6	7	8	
y	1	1.5	2.25	3.375	5.0625	

Select your answer from the drop-down menu.

The data shows exponential growth ✓ ▼

QUESTION 13



Determine if the data in the table of values shows exponential growth, exponential decay, or neither.

x	2	3	4	5	6	
y	7,776	1,296	216	36	6	

Select your answer from the drop-down menu.

The data shows exponential decay ✓ ▼.

QUESTION 14



Determine if the data in the table of values shows exponential growth, exponential decay, or neither.

x	8	9	10	11	12	
y	16,384	4,096	1,024	256	64	

Select your answer from the drop-down menu.

The data shows

exponential decay ✓ ▼

QUESTION 15



Determine if the data in the table of values shows exponential growth, exponential decay, or neither.

x	6	7	8	9	10		
y	420	510	600	690	780		

Select your answer from the drop-down menu.

The data shows

neither exponential growth nor exponential decay ✓ ▼