

14-3 Notes Linear vs. Exponential

Linear

Linear patterns change by a COMMON difference, or a number we Add/subtract by to get from point to point.

The RULE that represents a linear pattern is $y = mx + b$
 m represents the Slope or rate of change
 b represents the y-int or initial value

The graph of a linear pattern is always a Straight line.

Exponential

Exponential patterns change by a COMMON FACTOR, or a number we multi/dividing by to get from point to point.

The Rule that represents a linear pattern is $y = a \cdot b^x$
 a represents the y-int or initial value
 b represents the behavior or rate of change

The graph of an exponential pattern is always a curved line.

State whether the following tables of values are linear or exponential and then write an equation.

x	-2	-1	0	1
y	-6	-3	0	3

+3

$$y = mx + b$$

Equation: $y = 3x$

x	0	1	2	3
y	2	8	32	128

Equation: $y = a \cdot b^x$
 $y = 2 \cdot 4^x$

State whether the following tables of values are linear or exponential and then write an equation.

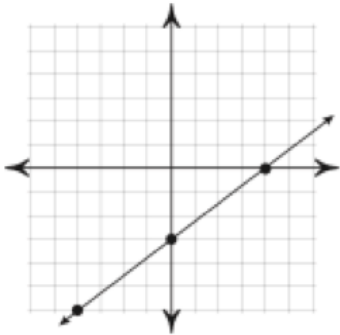
x	0	1	2	3
y	125	25	5	1

Equation:

x	0	2	4	6
y	-4	-2	0	2

Equation:

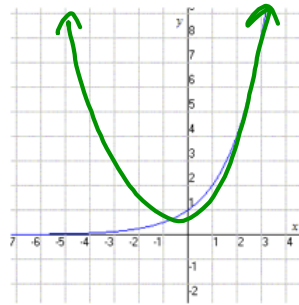
Are the following graphs linear or exponential? Then state the domain and range.



Type: _____

Domain: _____

Range: _____

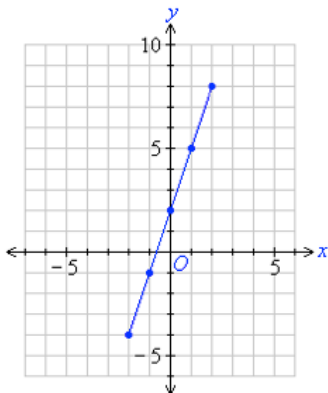


Type: _____

Domain: _____

Range: _____

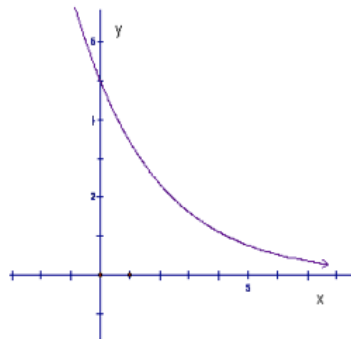
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