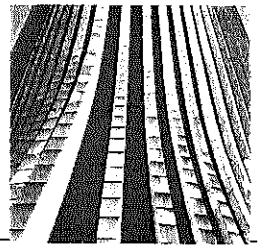
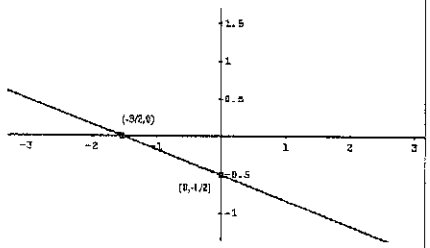
Linear, Exponential or Neither?

A Solidify Understanding Task



For each representation of a function, decide if the function is linear, exponential, or neither. **Give at least 2 reasons for your answer.**

1.



2.

Tennis Tournament

Rounds	1	2	3	4	5
Number of Players left	64	32	16	8	4

There are 4 players remaining after 5 rounds.

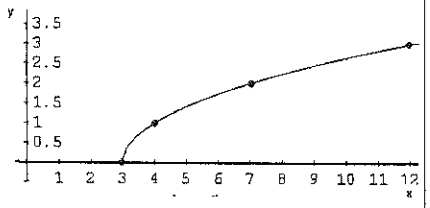
3.

$y = 4x$

4.

This function is decreasing at a constant rate

5.



6.

A person's height as a function of a person's age (from age 0 to 100)

7.

$-3x = 4y + 7$

8.

x	y
-2	23
0	5
2	-13
4	-31
6	-49

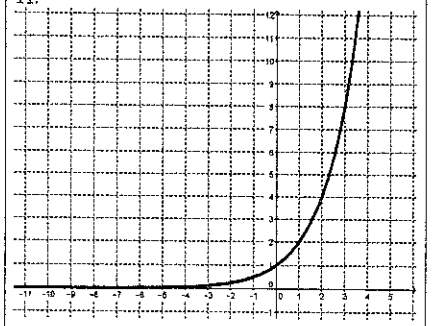
9.

Height in Inches	Shoe Size
62	6
74	13
70	9
67	11
53	4
58	7

10.

The number of cell phone users in Centerville as a function of years, if the number of users is increasing by 75% each year.

11.

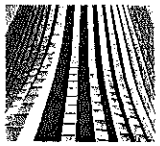


12.

The time it takes you to get to work as a function the speed at which you drive

Name: Linear and Exponential Functions

Ready, Set, Go!



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Ready

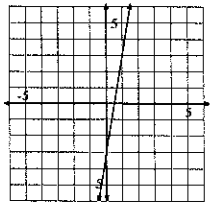
Topic: Comparing rates of change in both linear and exponential situations.

Identify whether situation "a" or situation "b" has the greater rate of change.

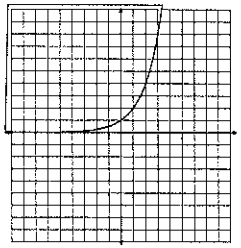
1. a.

x	y
-10	-48
-9	-43
-8	-38
-7	-33

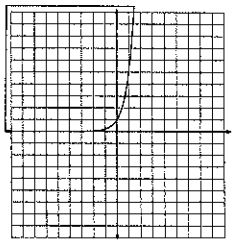
b.



2. a.



b.



3. a. Lee has $25 withheld each week from his salary to pay for his subway pass.

b. Jose owes his brother $50. He has promised to pay half of what he owes each week until the debt is paid.

Name: Linear and Exponential Functions | 4.4

4. a.

x	6	10	14	18
y	13	15	17	19

b. The number of rhombi in each shape.

Figure 1 Figure 2 Figure 3

5. a. $y = 2(5)^x$

b. In the children's book, *The Magic Pot*, every time you put one object into the pot, two of the same object come out. Imagine that you have 5 magic pots.

Set

Topic: Recognizing linear and exponential functions.

For each representation of a function, decide if the function is linear, exponential, or neither.

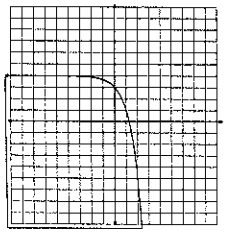
6. The population of a town is decreasing at a rate of 1.5% per year.

7. Joan earns a salary of $30,000 per year plus a 4.25% commission on sales.

8. $3x + 4y = -3$

9. The number of gifts received each day of "The 12 Days of Christmas" as a function of the day. ("On the 4th day of Christmas my true love gave to me, 4 calling birds, 3 French hens, 2 turtledoves, and a partridge in a pear tree.")

10.



11.

Side of a square	Area of a square
1 inch	1 in²
2 inches	4 in²
3 inches	9 in²
4 inches	16 in²