Activator

Given this table, what is the beginning value (y-intercept)? B = 4

Is this table linear or exponential ? Exponential

Why? Repeated Multiplication

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

(2)

(2)

(2)

Today's Objective

Students will be able to write exponential equations and functions.

Announcements

Given this table, write a function.

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$$C = \frac{A_2}{A_1} = \frac{16}{8} = (2)$$

$$F(x) = b(C)^x$$

$$f(x) = 4(2)^x$$

x	f(x)	
-1	2	
0	4	(2)
1	8	(2)
2	16	(2)

Write the exponential function.

Evaluate for F(3).

$F(x) = B\,(C)^x$

$F(x) = 4\,(2)^x$

$F(3) = 4\,(2)^3$

$F(3) = 4(2)(2)(2)$

$F(3) = 32$

B = 4

C = (2)

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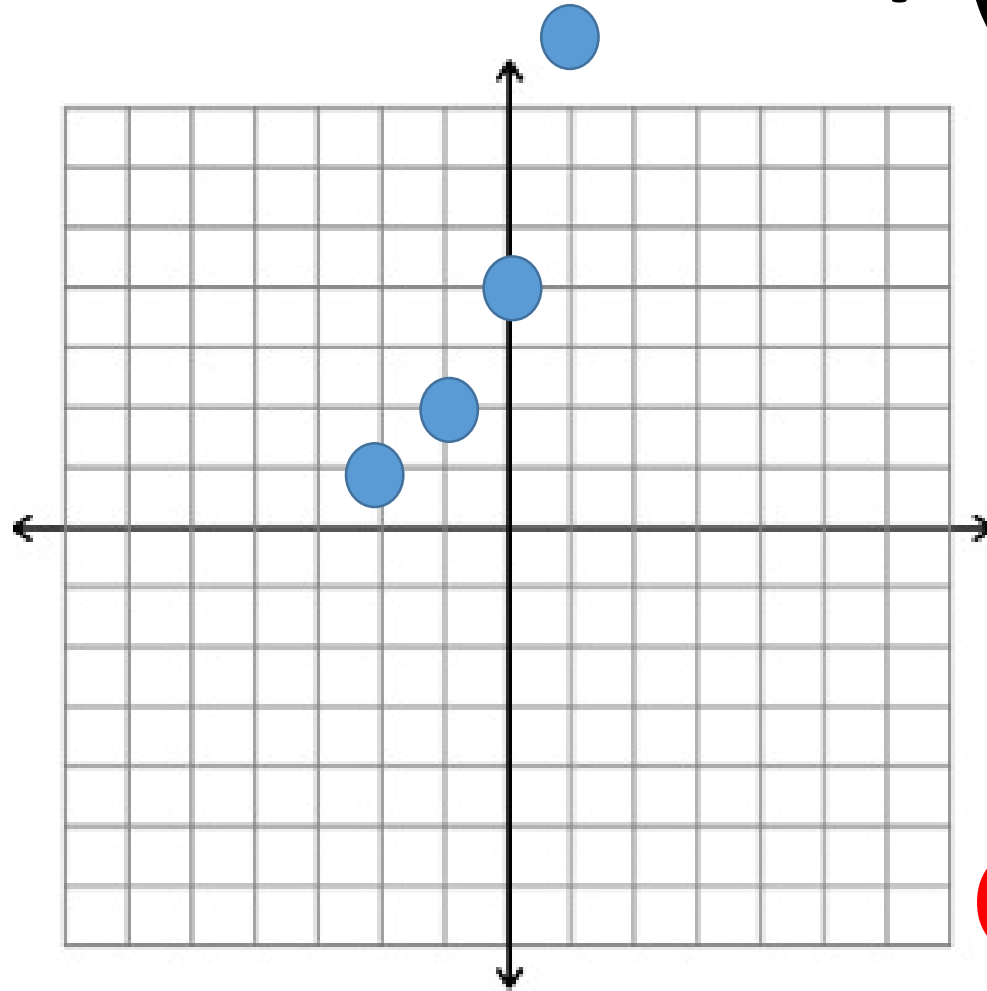
Lesson 6.7

x	F(x)
0	4
1	8
2	16
3	32

Graph the function. $F(x) = 4\,(2)^{x}$

x	F(x)
-2	1
-1	2
0	4
1	8

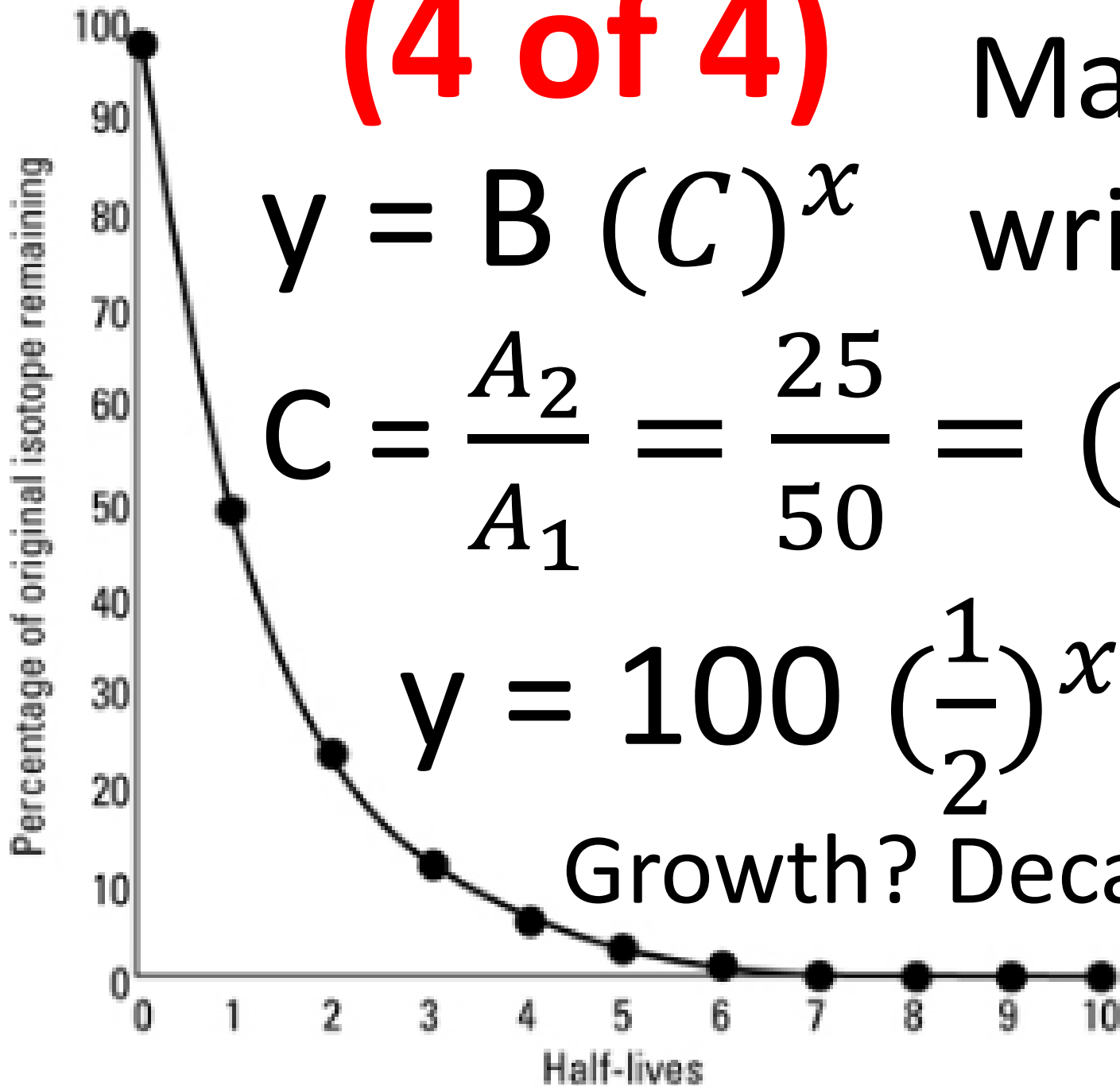Is this exponential growth or decay?

Growth Why?

Make a table, and write an equation.

$$y = B (C)^x$$

$$C = \frac{A_2}{A_1} = \frac{25}{50} = \left(\frac{1}{2}\right)$$

$$y = 100 \left(\frac{1}{2}\right)^x$$

Growth? Decay?

x	y
0	100
1	50
2	25
3	12.5

$\left(\frac{1}{2}\right)$

$\left(\frac{1}{2}\right)$

$\left(\frac{1}{2}\right)$

Percentage of original isotope remaining

Half-lives

Group Work Questions

Directions: All groups, please do all of the questions. Use your notes from last class to help you. [Ask 2 people before you ask me.]

Last time, we did Lesson 6.7 Notes.

2nd Stop @ 9:03   3rd Stop @ 10:06   8th Stop @ 2:25

*One person from each group will present one question.

Work Period

The manufactures of Hess toys cost $125 to design and $5.25 manufacture each toy. C(t) means the cost of the toys. Write the cost function. Total cost for 4-toys? Linear or exponential? Linear

$$C(t) = mt + b$$

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$$C(t) = 5.25t + 125$$

$$C(4) = 5.25(4) + 125 = \$146$$

Exit Ticket

The Hess company wants to know how much it will cost to manufacture 250 toys.

$c(t) = \$5.25t + \$125$

$c(250) = \$5.25(250) + \$125$

$c(250) = \$1312.50 + \$125$

$c(250) = \$1437.50$ It will cost $1437.50 to manufacture 250 toys.