

# Warmup

Have out progress report signed by parent

## Linear and Exponential

Given the following scenarios, you are to compare which method is better.

- Two dollars for each bag of leaves
- Two cents for one bag, 4 cents for 2 bags, 8 cents for 3 bags, and so on with this amount doubling for each additional bag.

Create each explicit equation.

Option A:

$$A_n = 2n \quad y = 2x \quad f(n) = 2n$$

Option B:

$$0.02(2)^{x-1}$$

Create a table for each option.

Option A

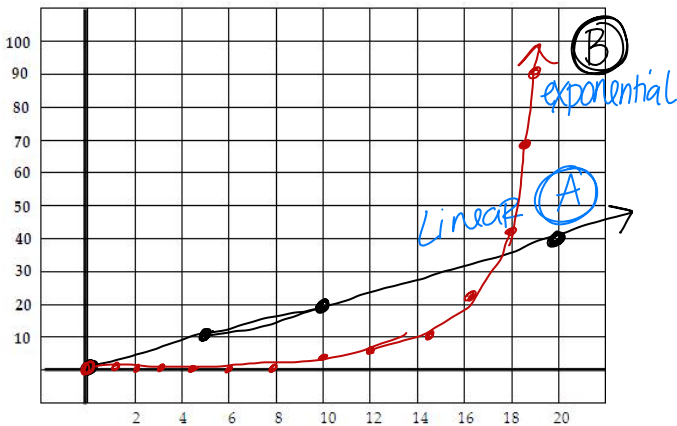
x	y
0	0
1	2
2	4
3	6
4	8
5	10

>+2  
>+2  
>+2

Option B

x	y
0	0
1	0.02
2	0.04
3	0.08
4	0.16
5	0.32

>x2  
>x2  
>x2



Graph each table on the graph provided.

Be sure to label A and B.

- 1) If Celia rakes 5 bags of leaves, which method does she opt for? Why?

A → \$10      B → \$0.32      Option A → more \$

- 2) What if she rakes 10 bags of leaves?

A →  $2(10) = \$20$       B →  $0.02(2)^{10-1} = \$10.24$   
A → more \$

- 3) How many bags of leaves does she have to rake before method b pays more than method a?

18    20     $2(11) = 22$      $0.02(2)^{11-1} = 20.48$   
12    11     $2(12) = 24$      $0.02(2)^{12-1} = \$40.96$  → x2  
12 bags

- 4) Describe the difference in payment plans. What do you notice about the growth of each one? Put down ALL that you know!

Amount \$      A → Linear      B → Exponential  
Arithmetic      Geo  
+2                      x2

$0.02(2)^{1000-1} = \text{way too much \$}$