Warm Up

Below is a table of data. Is it linear or exponential?

x	y
0	10
1	30
2	90
3	270

+1 → ×3

+1 → ×3

+1 → ×3

If it is exponential, how do we find the growth factor?

$\frac{\Delta y}{\Delta x} = \frac{20}{1} \neq \frac{60}{1} \neq \frac{180}{1}$

Not linear, no constant slope

Finding Growth Factors

Some growth factors are easy to find just by looking at the table.

x	y
3	2
4	10
5	50
6	250

+1, +1, +1 ; ×5, ×5, ×5

x	y
3	2
4	6
5	18
6	48

×3, ×3, ×3

What if it's not that easy?

This is exponential, but it's hard to see the Growth Factor.

x	y
1	46
2	552
3	6624
4	79,488

+1, +1, +1

We are multiplying ↓

We divide ↑

x	y
1	46
2	552
3	6624
4	79,488

+1, +1, +1 ; ×12, ×12, ×12

$552 \div 46 = 12$

$6624 \div 552 = 12$

$79488 \div 6624 = 12$

To find the Growth Factor, divide UP the table.

Problem 1.3 Recap

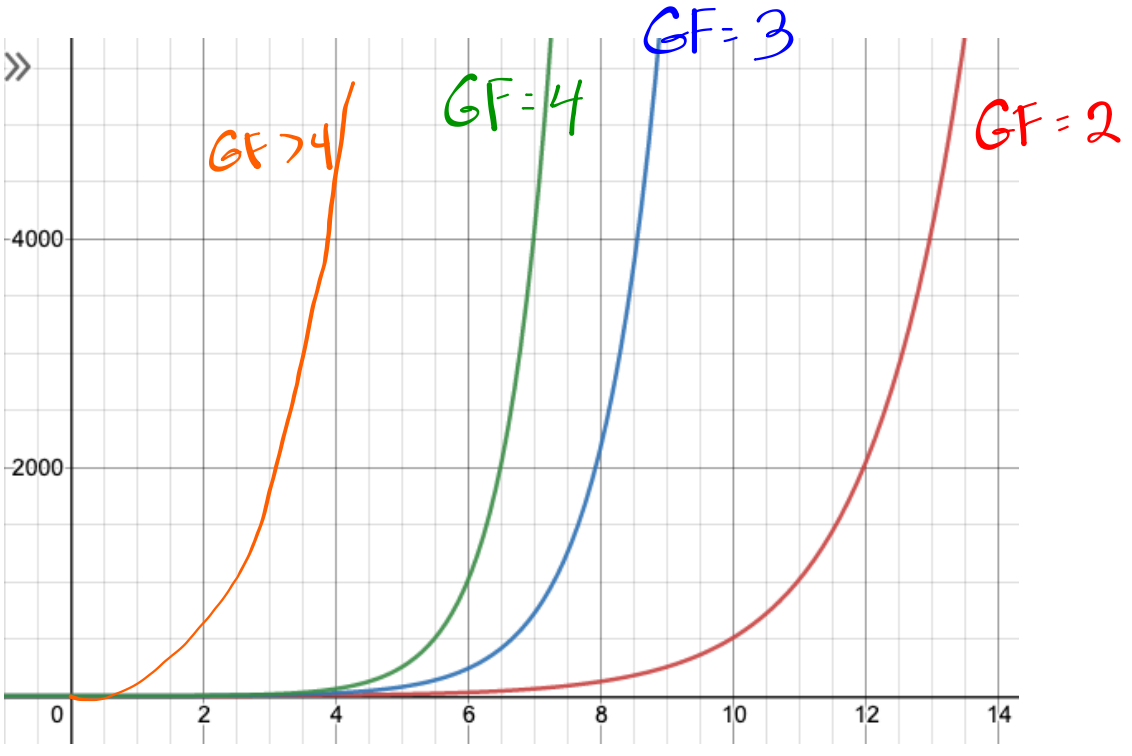
Square Number	Number of Rubas			
	Plan 1	Plan 2	Plan 3	Plan 4
1	1	1	1	20
2	2	3	4	25
3	4	9	16	30
4	8	27	64	35
5	16	81	256	40
6	32	243	1,024	45
7	64	729	4,096	50
8	128	2187	16,384	55
9	256	6561	65,536	60
10	512	19,683	262,144	65

GF = 2

GF = 3

GF = 4

Linear



The greater the growth factor, the faster the graph increases.

Classwork

Page 19, #'s 15, 17-21, 51

(Templated worksheet available on website.)