Worksheet 1

Exponential Challenge – Grow Your Money

You are given $1000 and earn 10% interest per year that you leave the money invested. After how many years will you double your money? Take a quick guess!

_____

Now let's try completing a table that tracks your cash investment!

x Years Invested	Value of Account
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

How much will the account be worth in 20 years? _____

What do you think the graph would look like? Would it look like a straight line?

Exponential Challenge – Cross that Room!

You are standing in a room that is 200m long. Once a minute you cross halfway between the spot where you are standing and the space left to cross. This means has after each minute the distance remaining will decay by ½ or 50% or 0.50.

a) Prediction: How long will it take to cross the room? _____

b) Complete the following table showing the relationship between elapsed time and distance remaining.

x Minutes Passed	Distance (m) Remaining
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

c) How much space will remain if you went to 15 minutes? _____

d) When would you reach the end (0 meters remaining?) _____

Now imagine you crossed only 10% of the 200m room every minute.

1) What percent would remain to cross each minute?

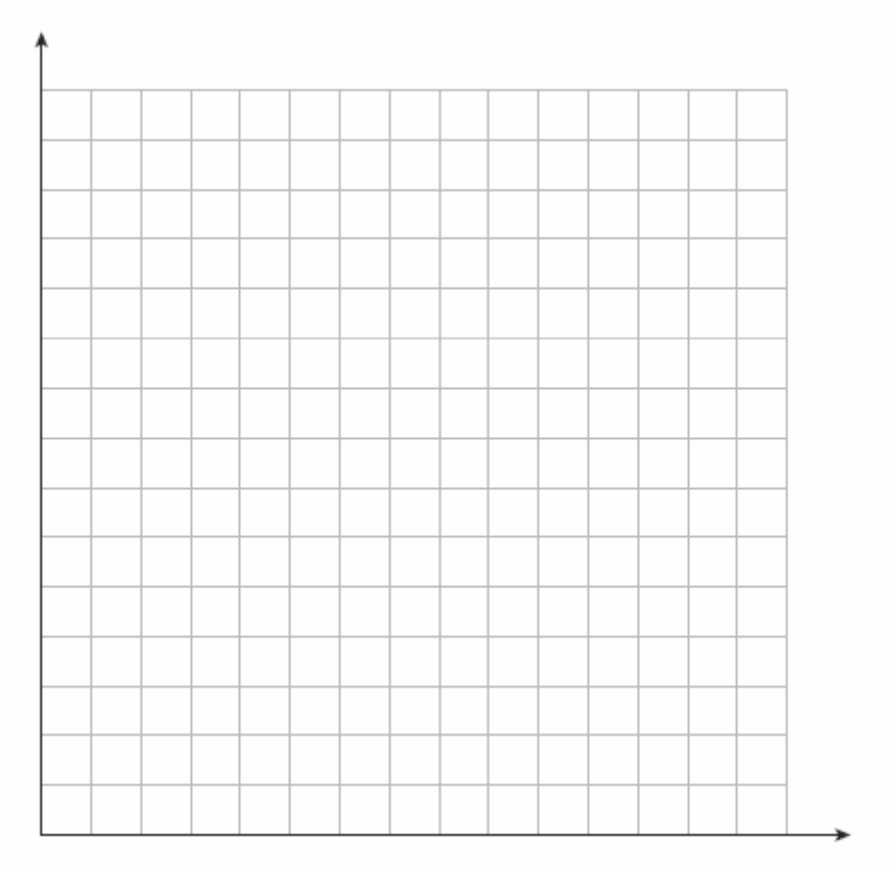
_____

2) Let's try to figure it out!

X minutes	Distance Remaining	10% of Distance	Subtract them	Now take 90% of column 1
0				
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

3) What do you notice about columns 4 and 5? _____

Let’s graph the values! Use a different color pen to graph each of the tables from the two examples.



Compare and contrast the two curves:

How are they similar? _____

How are they different? _____