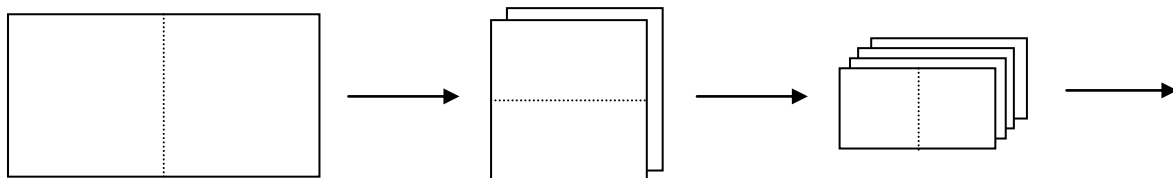


Exponential Growth

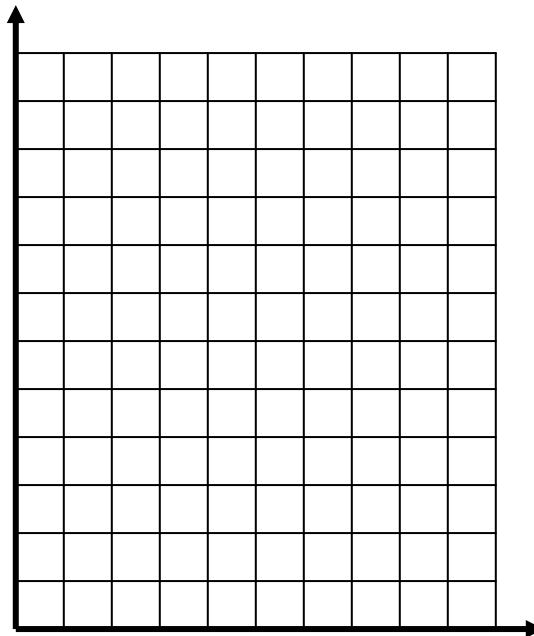
Alejandro is making ballots for an election. He starts by cutting a sheet of paper in half. He then stacks the two pieces and cuts them in half. He stacks the resulting four pieces and cuts them in half. He repeats this process creating smaller and smaller pieces of paper.



After each cut, Alejandro counts the ballots and records the results in a table. Alejandro wants to find a way to predict the number of ballots after any number of cuts.

1. Cut a sheet of paper like Alejandro did, and count the ballots after each cut. Make a table to show the number of ballots after each cut. Look for a pattern in the way the number of ballots change with each cut. Graph the data from the table. Be sure to label the graph and mark the scale.

#Cuts	#Ballots



2. What is the pattern?

3. What is the initial amount? _____
 4. What is the growth factor? _____
 5. What is the exponent? _____
 6. Write an equation that represents the table. _____
 7. 20 cuts would make _____ ballots (show your work)
 8. 30 cuts would make _____ ballots (show your work)
-

Use the table below.

x	y
0	1
1	6
2	36
3	216
4	1296

9. What is the initial amount?
10. What is the growth factor?
11. What is the exponent?
12. Write an equation to represent the table.

Use the table below.

X	Y
1	9
2	81
3	729
4	6561
5	59049

13. What is the initial amount?
14. What is the growth factor?
15. What is the exponent?
16. Write an equation to represent the table.