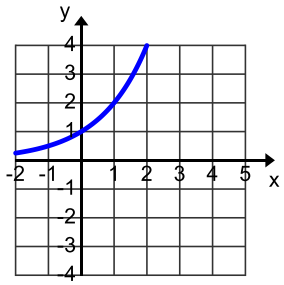
Chapter 12 Practice Test

Name: _____ Time› Start: _____ Finish: _____ Total Time = _____

Open Desmos and click the + button in the top left and select to enter a table. After entering the table, look at the graph and decide what type of graph it appears to be. Use this cheat sheet to below to help you decide and then give the Regression Equation that best fits the line.

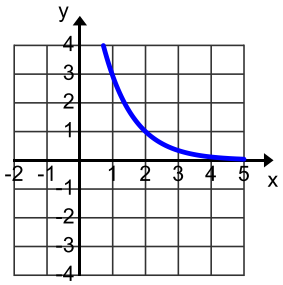
Exponential Growth

$y_1 \sim a \bullet b^{x_1}$



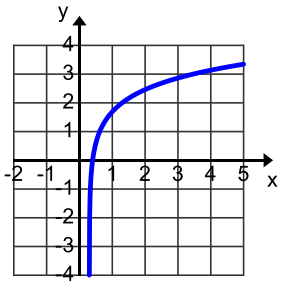
Exponential Decay

$y_1 \sim a \bullet b^{x_1}$



Logarithmic

$y_1 \sim a \bullet \log(x_1)$



1. _____

x	y
0	2
1	2.5
2	2.9
3	3.5
4	4.1

2. _____

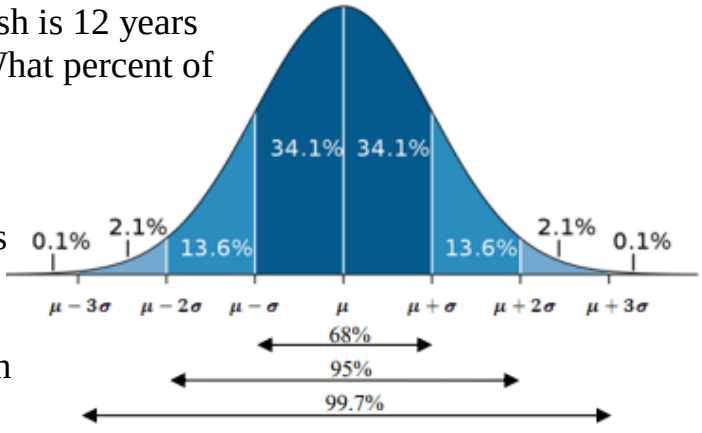
x	y
2	1.5
3	2.4
4	3
5	3.5
6	3.9

3. _____

x	y
0	8
1	1.6
2	0.3
3	0.06
4	0

_____ 4. Pretend that the average life of a goldfish is 12 years with a standard deviation of 3 years. What percent of goldfish live 15 or more years?

_____ 5. Pretend that the average number of nuts a squirrel stores is 10,000 nuts with a standard deviation of 1,500 nuts. What percent of squirrels store less than 7,000 nuts?



_____ 6. Pretend that the **male** seahorse gives birth, on average, to 700 babies with a standard deviation of 200 babies. What percentage of male seahorses give birth to more than 900 babies?

_____ 7. If y varies directly as x and when y = 20, x = 5, what is y when x = 12?

_____ 8. y varies jointly as x and z and when y = 120, x = 4 and z = 2. What is y when x = 5 and z = 3?

_____ 9. If y varies inversely as x and when y = 40, x = 2, what is y when x = 8?

_____ 10. Simple interest varies jointly as principal and time. If $2000 is put in a bank account for 4 years and earns interest of $720, how much simple interest would be earned on $5000 invested for 9 years?

_____ 11. The time it takes for a company to mow a yard varies inversely with the number of workers (each having a mower). If it takes 3 workers 2 hours to mow a 10-acre area, how long would it take 5 workers?

Use Desmos to calculate the following:

_____ 12. The number of permutations of 8 objects taken 5 at a time.

_____ 13. The number of combinations of 12 objects taken 3 at a time.

_____ 14. The number of permutations of 14 objects taken 5 at a time.

_____ 15. The number of combinations of 20 objects taken 3 at a time.

_____ 16. How many ways can you arrange 4 letters from a list of 10 letters?

_____ 17. How many ways can 6 runners can be assigned running lanes?

_____ 18. How many 3-topping pizzas can be made from 15 topping choices?

_____ 19. I am going on vacation and must pick 5 shirts to pack from the 30 shirts I have. How many options exist?

_____ 20. From the 26 letters, I must pick a passcode using 3 of them. You can use capital letters, lower case letters, or a combination of both. However, once you use a letter, you can't use it again no matter if it was a capital or lowercase letter. How many passcodes exist?

_____ 21. On a quiz, there are 5 True/False questions and 5 multiple choice questions with options of A, B, or C.
How many different ways can the quiz be answered?