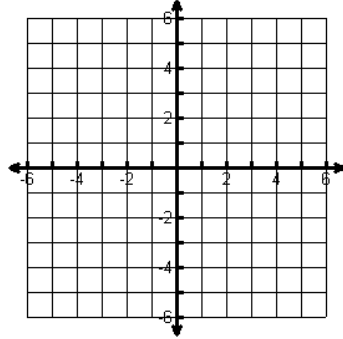


Name: _____ Date: _____

For each of the functions find the following information.

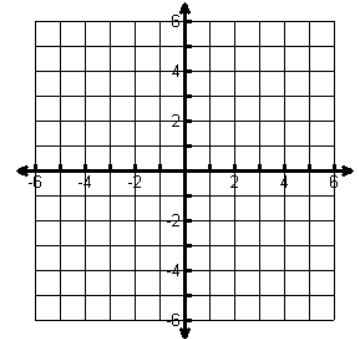
1. Graph the function $f(x) = (2)^x - 3$

x	y



2. Graph the function $f(x) = -\left(\frac{1}{2}\right)^x + 5$

x	y



Asymptote _____

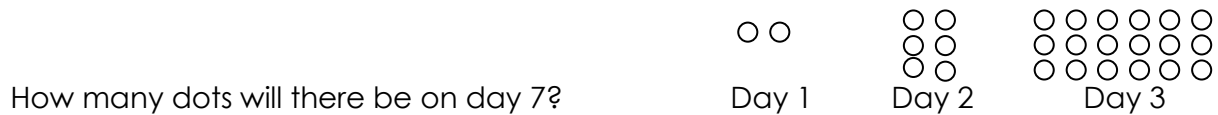
Asymptote _____

Sequence	Common Difference (d)	Formula	Given Term (n^{th})
-28, -34, -40, -46, ...			$a_{10} =$
10, 13, 16, 19, ...			$a_{12} =$
-14, -24, -34, -44 ...			$a_{38} =$

Sequence	Common Ratio (r)	Formula	Given Term (n^{th})
2, 12, 72, 431 ...			$a_8 =$
128, 32, 8, 2, ...			$a_6 =$
3, 12, 48, 192, ...			$a_{38} =$

Exponential Models

3. Write an explicit formula to model the number of dots per day.



4. Taylor is training for a marathon. He decides to begin by running 3 miles and increase by 1.5 miles each day.

Write an equation to represent the scenario.

How long will it take him to run 26.2 miles?

5. You bought a Boston Whaler in 2004 for \$12,500. The boat's value depreciates by 7% a year. How much is the boat worth now? How much is it worth in 2020?

6. The population of a large city increases by a rate of 3% a year. When the 2000 census was taken, the population was 1.2 million.

a) Write a model for this population growth.

b) What should the population be now? What is the projected population for 2020?

Solve the following exponential equations. Show all work!

11. $3^{-3x+1} = 3^{x-9}$

12. $25^{x-4} = 5^{3x+1}$

13. $8^{x-1} = \left(\frac{1}{2}\right)^{2x-1}$

14. $4^{3-x} + 2 = 18$