## Logarithmic Functions

While working in a group make sure you:

- Expect to make mistakes but be sure to reflect/learn from them!
- Are civil and are aware of your impact on others.
- Assume and engage with the strongest argument while assuming best intent.

**Definition 0.1.** The inverse to the exponent function is the *logarithmic function*. Let a, and b be real numbers, with a > 0 then



- 2. Find the value t in the following by writing logarithmic equations as exponential equations:
  - (a)  $\log(t) = 5.5$
  - (b)  $\log_7(\sqrt[3]{7}) = t$
  - (c)  $\log_t(4) = 2$

(d) 
$$2 = e^{-0.02t}$$

3. Given that g(x) is an logarithmic function of the form  $y = \log_b(x)$ that has been vertically shifted and is graphed below. Find the equation.



- 4. Assume you have \$50,500 and a savings account offer with and effective annual interest rate of 2%.
  - (a) Find a function that describes how much money you have at time t when it is compounded n time a year.
  - (b) Use the function above to determine how much money you have in the bank if the money is compounded:
    - i. annually?

ii. daily?

iii. continuoulsly?