

Exponential Functions.

5.14

1/2

Folding Paper

paper 0.003 in thick

moon 239,000 mi from Earth.

Q1: How many folds

Q2: How many to get back.

Graphing Exponentials

$$y = 7^x$$

$$y = 7^{-x}$$

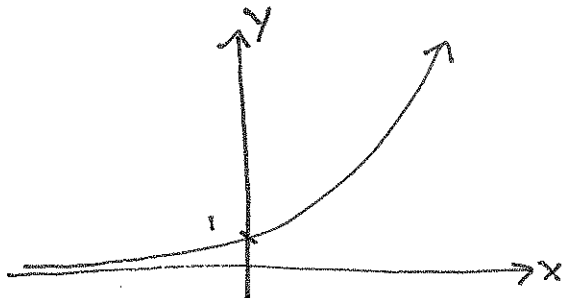
$$y = \left(\frac{1}{7}\right)^x$$

$$y = 3 \cdot 7^x$$

$$y = -3 \cdot 7^x$$

$$y = \left(\frac{1}{7}\right)^{-x}$$

Exponential growth vs decay.

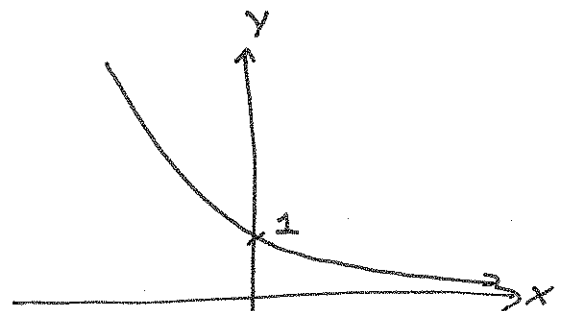


$$y = f(x) = a^x, a > 1$$

$$y\text{-int} = 1$$

Domain & Range.

Horizontal Asymptote.



$$y = g(x) = a^{-x}, a > 0$$

$$b^x, 0 < b < 1$$

Euler's Number e .

5.1A
2/2

explore $\lim_{N \rightarrow \infty} \left(1 + \frac{1}{N}\right)^N$ using the calculator.

Graph $y = e^x$

$$y = -2e^x$$

$$y = e^{-x}$$

$$y = -2e^{-x}$$