30.9	2	3	4
Outcome 7a: I can demonstrate an understanding of exponential functions.	Solve exponential equations in which the bases are/ are not powers of one another. Given the graph of $y = a^x$, identify the domain, range, horizontal asymptote and intercepts. Identify whether it represents a growth or decay Identify the transformations given the equation	Sketch with or with out technology the graphs of exponential functions of the form $y = a^x$. Apply strategies for sketching transformations of the graph $y = a^x$ with types of transformations #5, 6	Explain the role of the horizontal asymptotes for exponential functions. Explain strategies for sketching transformations of the graph $y = a^x$ with multiple types of transformations

Level 2

1. Solve

a) $2^x = 32$

b) $3^x = 9^{x-2}$

c) $8^{2x} = 16^{x+3}$

d) $25^{2x-5} = 125^{x+6}$

2. . Identify all of the transformations of the following: (ie vertical translation up 2)

a) $f(x) = 3^{-x}$

b) $g(x) = 2^x + 3$

c) $h(x) = 3\left(\frac{1}{4}\right)^{x+1}$

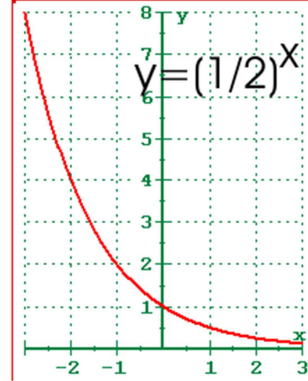3. Given the following graph, find:
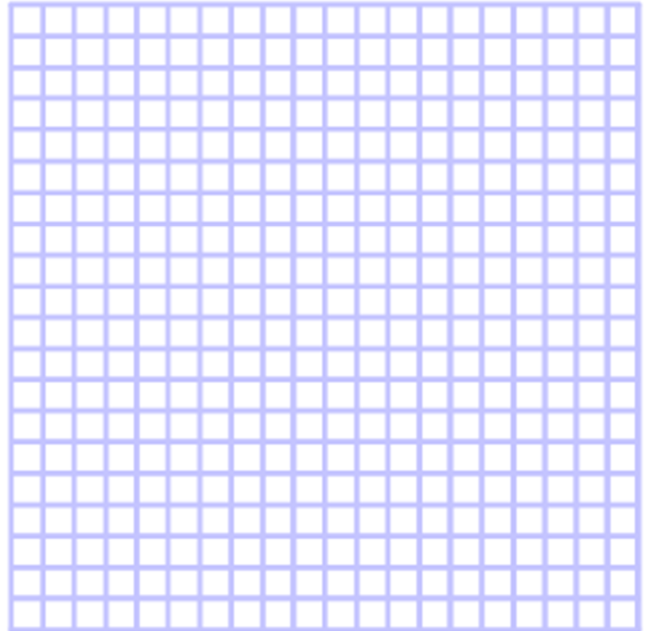
Domain:

Range:

Horizontal asymptote

Y intercepts:

Growth or decay:

$$y = (1/2)^x$$

Level 3

4. Use a table of values to sketch the graph of $y = \left(\frac{1}{3}\right)^x$

5. Using the graph of $y = 2^x$, sketch the graph of $y = -2^x - 3$

Level 4

Explain which parameters of an exponential function affect the x intercept of the graph of the function?

Page 357