Objective 09 HW 08

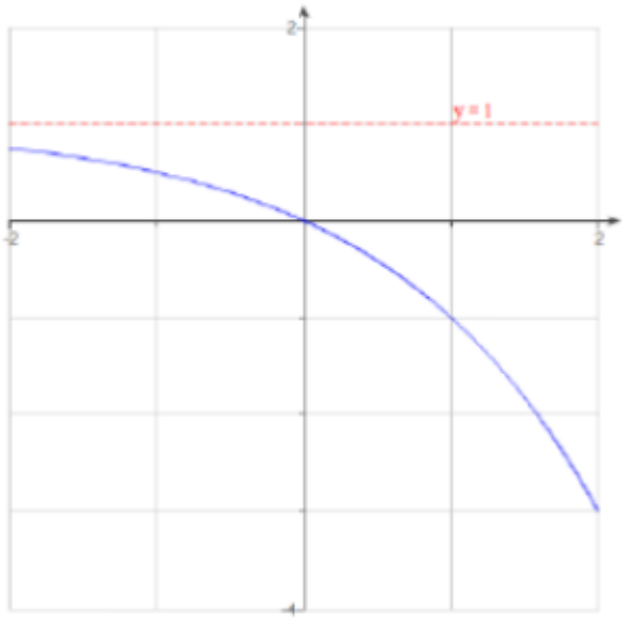
Understand, solve, graph and apply exponential and logarithmic equations including familiarity with the change of base formula to evaluate logarithms

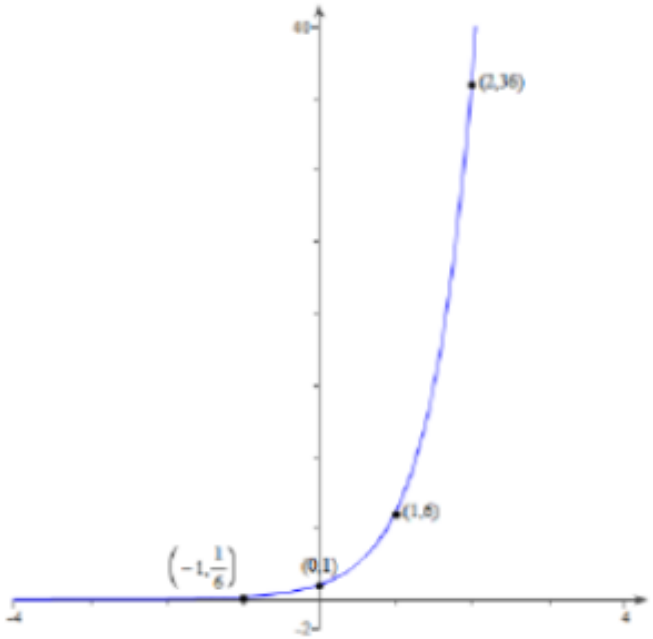
1. Evaluate the following expressions:

(a) 5^{-3} (b) $64^{\frac{2}{3}}$ (c) $27^{\frac{2}{3}}$ (d) $(\frac{1}{3})^2$

2. Suppose $g(x) = 2^x + 4$, What is $g(-1)$? If $g(x) = 12$, what is x?

3. Determine the exponetial function whose graph is given.

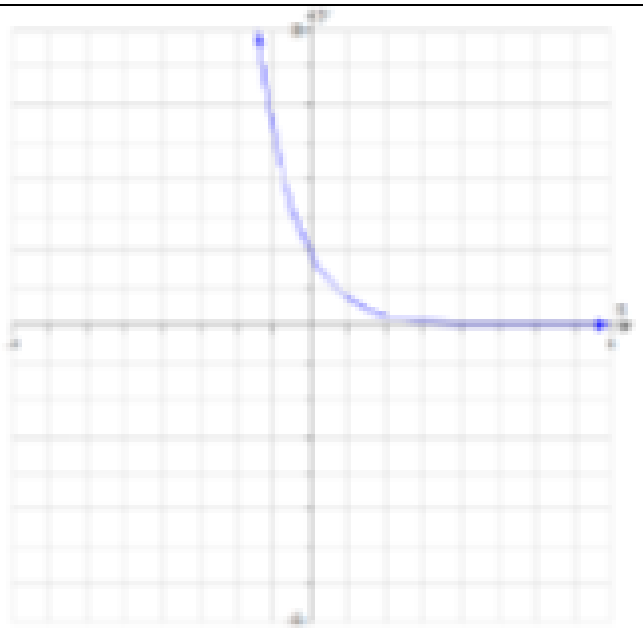


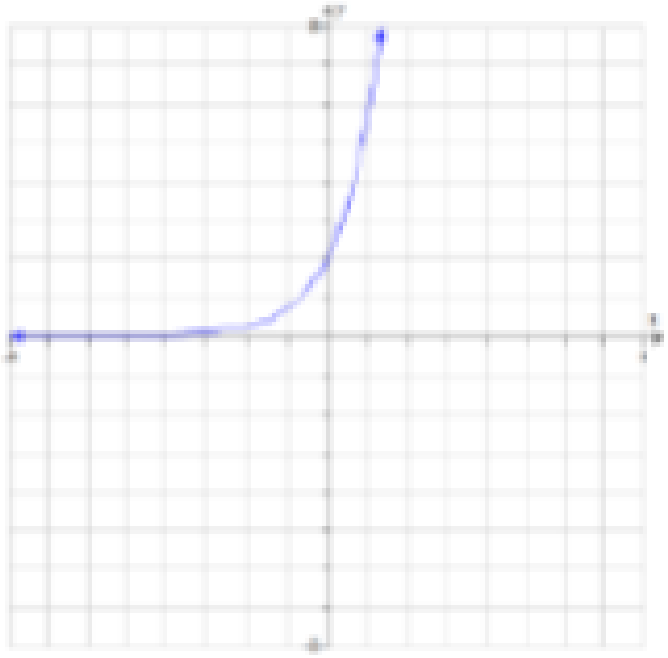


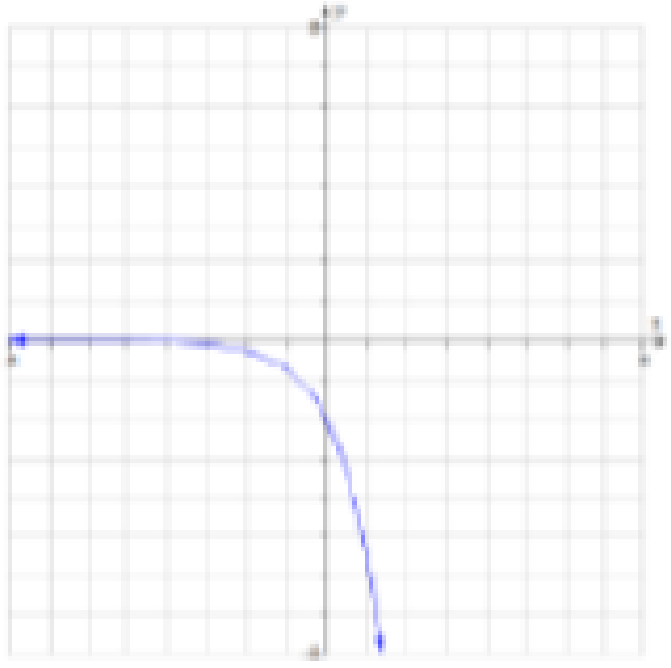
4. Solve the following equations:

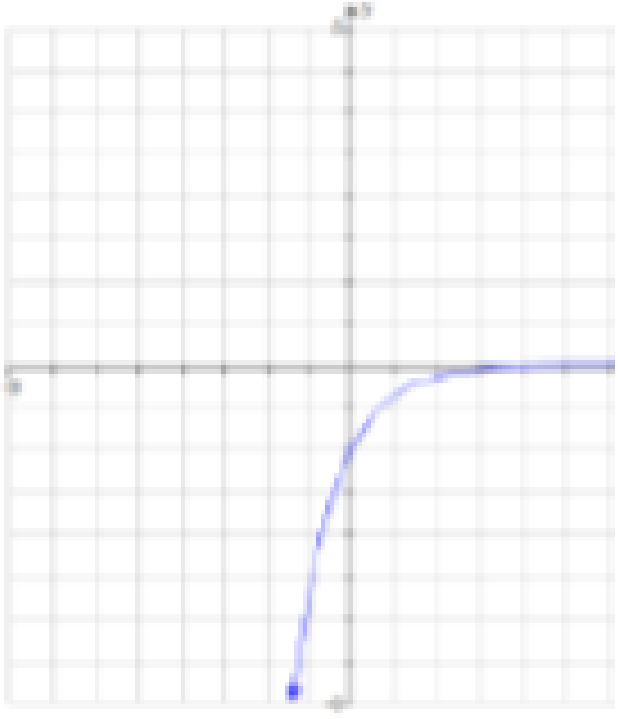
$5^{x^2} = 125^x$	$6^{x^2-13} = 36^{6x}$	$5^{-x-9} = 625$	$2^{x^2+5x} = 4^{-3}$
$(\frac{1}{2})^{5x+5} = (\frac{1}{4})^4$	$(\frac{1}{3})^{3x+5} = 9^x$		

5. Identify the graph of the equation $f(x) = 2e^{-x}$.





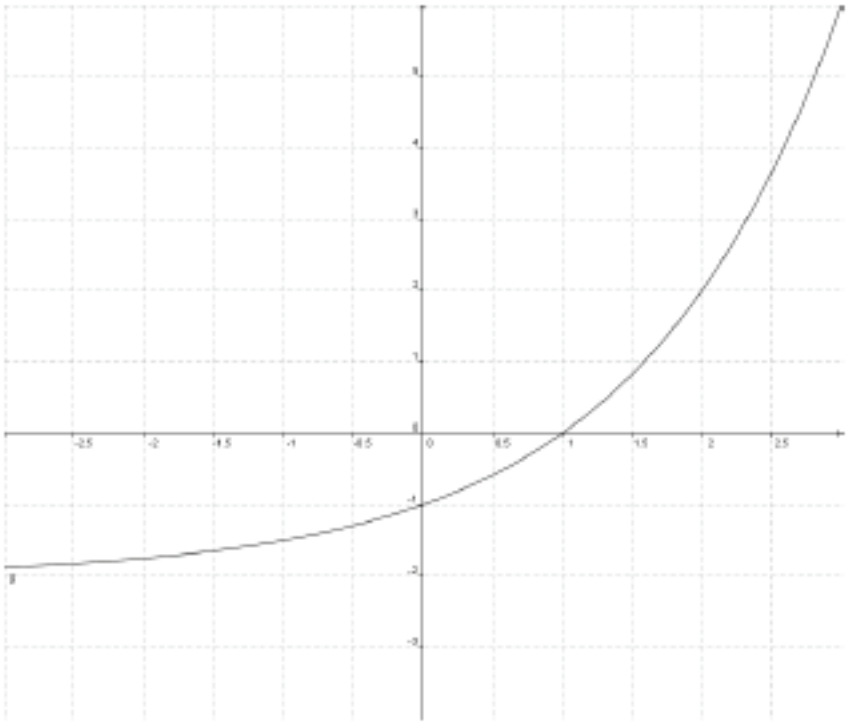




6.

Which function matches the graph shown in the following graph ?

(a) $y = 2^{x+2}$ (b) $y = 2^{x+1} + 2$ (c) $y = 2^{x-2}$ (d) $y = 2^x - 2$



07. to 10

True or false: The graph of $y = 2^x$ and $y = (\frac{1}{2})^x$ are symmetric with respect to the y-axis.

True or false: For the equation $y = a^x$ $(a > 0, a \neq 0)$, $y \to \infty$ as $x \to \infty$.

For the exponential function $f(x) = a^x$ the domain is _____ and the range is _____.

The exponential function $f(x) = a^x$ is increasing when _____ and is decreasing when _____.