Check Your Understanding – Exponential and Logarithmic Functions

Please answer on loose-leaf.

1. Describe the transformations applied to the graph of the parent function.

$$h(x) = -4\left(\frac{2}{5}\right)^{3x+15} - 11$$

2. Write the equation of the inverse of the function given below using appropriate notation.

$$q(x) = 3\log_5\left[-\frac{1}{7}(x-4)\right] + 10$$

3. Given: $g(x) = -\frac{1}{8}e^{[-\frac{4}{3}(x+2)]} + 1$

   a) State the equation of the parent function, $f(x)$.   _____

   b) Write a mapping rule describing the transformations applied to the graph of the parent function.

   c) State the equation of the asymptote.   _____

   d) Is the graph of $g(x)$ a growth curve or a decay curve?   _____

4. Rewrite the following equations in exponential form.

   a) $\log_2\frac{1}{32} = -5$

   b) $\ln(4-x) = 2$

5. Rewrite the following equation in logarithmic form.

   $z^9 = r$

6. Evaluate the following logarithms.

   a) $\log 100$

   b) $\log_8\frac{1}{512}$

7. a) Graph $m(x) = 3 \log_2 \left[-\frac{1}{2}(x-6) \right] - 4$ on the graph paper provided. *Include a mapping rule and a table of values containing at least five image points.*

    b) Complete the chart for $m(x)$.

Function Characteristics	Answers
Domain	
Range	
Interval of Increase	
Interval of Decrease	
End Behavior	Left: Right:
Equation of the Asymptote	