Take Home Quiz

Due: 3/9/18

Note:

This quiz is completely **optional**. This will be graded on actual effort and not correctness. The boundary between actual effort and simply scribbling answers down will be at my discretion. **To avoid any issues, please show all work or express your thought process in words** Of course, I recommend for you to do these problems, but again, it is not necessary. I will not accept any incomplete work.

1. Solve the folowing equations for the variable, showing all your work. Write your answers in **exact** form in the blank provided.

   (a) $\ln(11 \cdot e^p) = -14p + 2017$

   $p =$_____

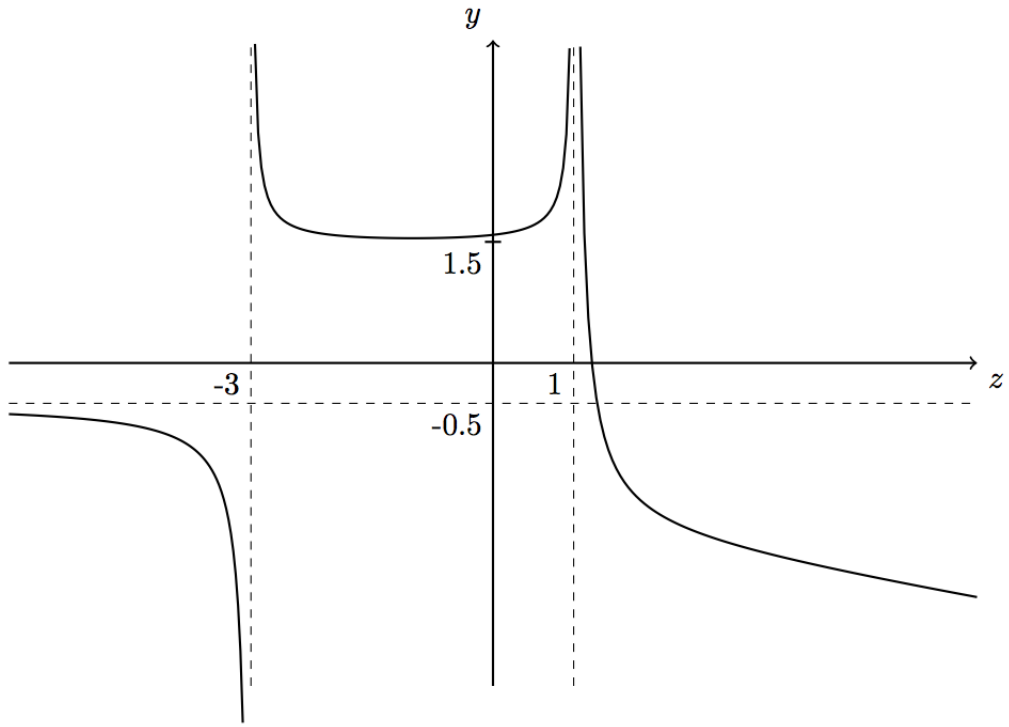
   (b) $\log(10^x + 1) = \pi$

   $x =$_____

   (c) $e^{t+5} = 10^t$

   $t =$_____

2. Consider the folowing graph of a function $A(z)$. Assume the behavior of $A(z)$ depicted on the left and right of the graph continues as $z \to \infty$ (z approaches ∞) and $z \to -\infty$ (z approaches -∞)



(a) Write down equations for all vertical and horizontal asymptotes of $A(z)$.

The vertical asymptote(s) of $A(z)$ are _____

The horizontal asymptote(s) of $A(z)$ are _____

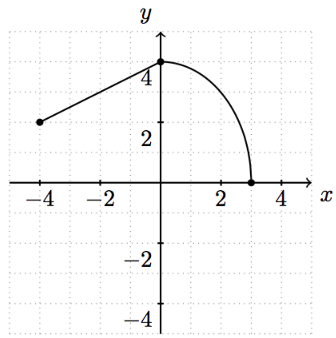
(b) Calculate the following limits

i. $\lim_{z \to -3^-} A(z) =$ _____

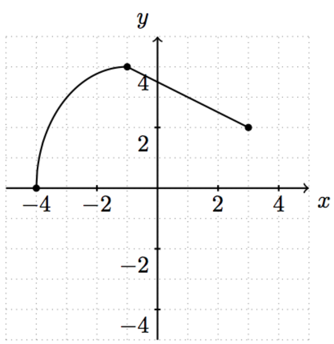
ii. $\lim_{z \to -3^+} A(-z) =$ _____

iii. $\lim_{z \to -\infty} 3A(z/2) =$ _____

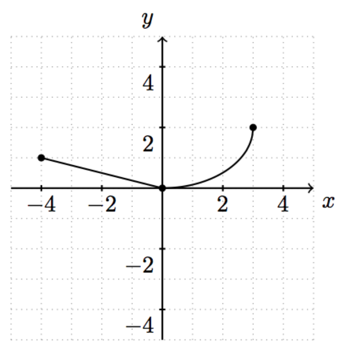
3. Consider the following graph of a function $y = q(x)$ on [-4,3]



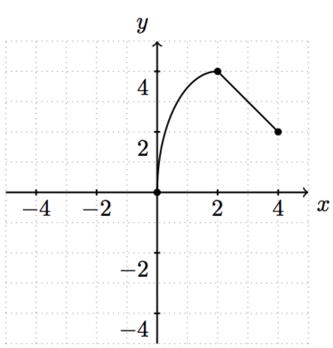
For each of the following graphs, if the graph is not a combination of shifts, stretches, compressions, and reflections of the graph $y = q(x)$, write "NOT A TRANSFORMATION". Otherwise, write a formula for the function corresponding the graph in terms of $q(x)$.



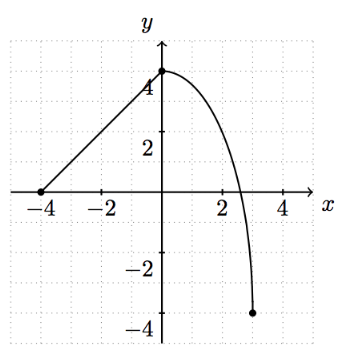
This is the graph of
$y =$ ______________________________



This is the graph of
$y =$ ______________________________



This is the graph of
$y =$ ______________________________



This is the graph of
$y =$ ______________________________