

Name:

MATH 105 - SEC 001, FALL 2010. QUIZ 6
TIME LIMIT: 30 MINUTES

INSTRUCTOR: GERARDO HERNÁNDEZ
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Good luck!

Problem 1. Give the definition of a even function

Problem 2. Give the definition of an odd function

Problem 3. If the graph of $y = e^x$ is reflected about the y -axis, what is the formula for the resulting function?

Problem 4. The domain of the function $g(x)$ is $-2 < x < 7$. What is the domain of $g(x - 2)$.

Problem 5. Let $m(n) = n^2 + 3n$. If the graph of $m(n)$ is translated to the right by 3 units, what is the formula for the resulting function? Simplify your answer as much as you can.

Problem 6. Express the following in terms of x without natural logs. Give EXACT answers, and simplify them as much as you can.

a) $\log\left(\frac{10}{1000^{5x}}\right)$

b) $\log\left(\frac{\sqrt{13^x}}{10^{-2x+1}}\right)$

c) $e^{x \ln(10) - x}$

d) $e^{5 \ln(x) - 6} + 3 \log(10^{2x}/100)$

Problem 7. Find the EXACT answer for the equation:

$$11 \cdot 3^x = 5 \cdot 7^x$$

Problem 8. In 1991, the body of a man was found in melting snow in the Alps of Northern Italy. An examination of a tissue sample revealed that 46 % of the carbon-14 present in his body at the time of his death had decayed. The half-life of the carbon-14 is approximately 5728 years. How long ago did this man die?

Problem 9. Graph the following function, and label all asymptotes and intercepts.

$$y = \log(x - 4) + 3$$

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Problem 10. Find the hydrogen ion concentration $[H^+]$ for the baking soda used to make donuts that you may be eating now, with a pH of 8.3. Hint: $\text{pH} = -\log[H^+]$.