Math 1314	Exam 3
Answer the questions in the spaces provided.	

Name and Time: _____

G-Number: _____

1. a) Use the remainder theorem to find the remainder when $f(x) = 3x^4 - 6x^3 - 5x + 10$ is divided by $x - 2$.

b)Using the above information from 1 a) and factor theorem check that whether $x - 2$ is a factor of $f(x) = 3x^4 - 6x^3 - 5x + 10$ or not? _____

2. List all the potential rational zero of $f(x) = 2x^5 - x^3 - 2x^2 + 12$ _____

3. Use Descarte's rule of sing to determine how many positive solution $f(x) = 2x^5 - x^3 - 2x^2 + 12$ has.

4. Find the composite a) $f \circ f(x)$ b) $f \circ g(x)$ c) $f \circ g(0)$ for the function $f(x) = 3x + 1 \quad \text{and} \quad g(x) = x^2$.

5. Is $f(x) = \frac{2}{3+x}$ is one to one? Give reason. _____

6. Find the inverse of the following one-one function, $f(x) = \frac{4}{2-x}$ _____

7. Solve for the x,

a) $2^{-x} = 16$

b) $(\frac{1}{5})^x = \frac{1}{25}$

c) $9^{2x}27^{x^2} = 3^{-1}$

8. find the exact value of

a) $log_5(25)$ _____

b) $log_{10}(\sqrt{10})$ _____

c) $log_{\frac{1}{3}}(9)$ _____

9. Use the properties of logarithm to express as sum and difference

a) $log_5(25x)$ _____

b) $log_2(z^3)$ _____

c) $ln(xe^x)$ _____