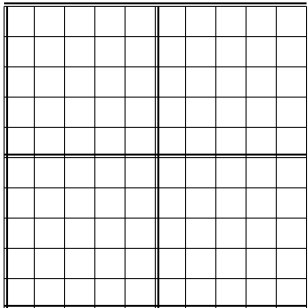


MATH 111 EXAM 2, Fall 2015

Simplify all answers. Show your work!		Name:	Score	
1.	a) Find the domain of the function: $f(x) = \sqrt{16 - 9x}$ Ans:_____	b) Find the domain of the function: $f(x) = x/(x^2 - 4)$. Ans:_____	1	
			2	
			3	
			4	
			5	
			6	
			7	
2.	Express the relation of the functions below in terms of shifts, stretching, compression and reflections a) $f(x) = x $, $g(x) = -5 x - 4 $.	b) $f(x) = x^2$, $g(x) = x^2 - 2x + 1$	8	
			9	
			10	
			Tot	
3.	The demand for certain silk ties is given by given by $x(p) = -160p + 9600$. a) What price results in maximum revenue?	b) What is the maximum revenue?		
			Ans:_____	
4.	Let $f(x) = 2x^2 - 4x + 3$. Find: a) The coordinates of the vertex.	b) The average rate of change for $x = 1$ to $x = 4$.		
			Ans:_____	
5.	Let $f(x) = \begin{cases} 1 - 3x & x \leq -2 \\ 2x + 1 & x > 2 \end{cases}$ a) Compute $f(-3)$ and $f(4)$.	b) Graph the function.		
			$f(-3)$:_____ $f(4)$:_____	
Extra Space				



5. Let $f(x) = x^3 - 3x + 4$. Graph the function and find:

a) The coordinates of local maxima and minima.

b) The interval(s) where $f(x)$ is increasing.

Ans: _____.

Ans: _____.

6. This table shows the undergraduate tuition y (in thousands) at a university over the last 6 years.

t	1	2	3	4	5	6
y	3.03	3.58	4.09	4.60	5.15	5.80

a) Find the regression line and R^2 value

b) Predict the tuition for the next two years.

Ans: _____.

Ans: _____.

7. Let $y = f(x) = 3x^2 - 5$. Compute and simplify the difference quotient $\frac{f(x+h) - f(x)}{h}$. Sketch the graph.

Ans: _____.

8. Let $f(x) = \frac{2x+5}{x-4}$. Find:

a) The x -intercept(s), if any.

b) The y -intercept.

Ans: _____.

Ans: _____.

9. a) Find all the roots and their multiplicities.

$$f(x) = x^2(x - 8).$$

b) Find all the roots and their multiplicities.

$$f(x) = 3(2x - 6)^3(x^2 + 4)^2.$$

Ans: _____.

Ans: _____.

10. A farmer has 2200 feet of fence to enclose 3 sides of a rectangular area adjacent to a river bank. Find

a) The dimensions that will yield the maximum area.

b) The maximum area

Ans: _____.

Ans: _____.

Extra Space (Comments about this test?)