



Handout 1

MATH 140 Lab: Section 1

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Student's Name:-----

Student's ID:-----

Note: This handout covers some problems from Pre-Calculus and College Algebra

Instruction: Work in groups to solve the following mathematical problems, and I want from each group one person to volunteer as a representative to present the solution of (one problem)/(one part of problem) on our class board. DON'T AFRAID TO MAKE MISTAKES BECAUSE WE LEARN FROM OUR MISTAKES!

Problem 1: Given: $f(x) = -2x^2 + 3$ and $g(x) = \sqrt{2x + 1}$

Find the following:

- a. $(f + g)(1)$
- b. $(f \circ g)(x)$
- c. $(g \circ f)(x)$
- d. $(f \circ f)(x)$
- e. $(g \circ f)(-3)$
- f. $\frac{f(b+h)-f(b)}{h}$

Problem 2: Find the domain for the following functions:

a. $f(x) = \frac{|x|}{x}$

b. $f(x) = \frac{x}{x^2+1}$

c. $f(x) = \sqrt{4-x^2}$

Problem 3: Find the proportionality constant for each of the following:

- a. y is directly proportional to x . If $x = 3$, then $y = 24$.
- b. m is inversely proportional to the square of n . If $n = 6$, then $m = 14$.
- c. a is jointly proportional to x and y and inversely proportional to z . If $x = 2$, $y = 3$, and $z = 5$, then $a = 50$.