EXAM 1

Math 212, 2014-2015 Fall, Clark Bray.

You have 50 minutes.

No notes, no books, no calculators.

YOU MUST SHOW ALL WORK AND EXPLAIN ALL REASONING TO RECEIVE CREDIT. CLARITY WILL BE CONSIDERED IN GRADING.

All answers must be simplified. All of the policies and guidelines on the class webpages are in effect on this exam.

Total Score _____ (/100 points)

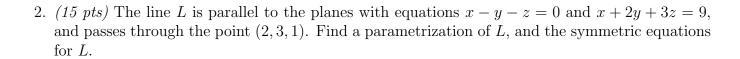
- 1. (20 pts)
 - (a) Use the geometric interpretations of cross product to find the vector \vec{v} for which

i.
$$\vec{v} \times (3, 2, 1) = (1, 1, -5)$$

ii.
$$\vec{v} \times (2,3,2) = (3,-2,0)$$

iii.
$$\|\vec{v}\| = \sqrt{14}$$

(b) Compute the vector \vec{w} whose component in the direction of (3,4) is 2, and whose component in the direction of (5,12) is 1.



3.	. (15 pts) Find the equation of the coordinate planes.	he ellipsoid with	a center at $(4, -2, 3)$	that is tangent to all	three of
		2			
		3			

- 4. (15 pts) The curve C in the xy-plane has equation $y = 4\sin(3x)$.
 - (a) Find the domain, target, and formula for a function f whose graph is the curve C.

(b) Find the domain, target, and formula for a function g for which one of the $level\ sets$ is the curve C.

(c) Find the domain, target, and formula for a function h that parametrizes the curve C.

5. (15 pts) Find the limit below, or show that it does not exist.

$$\lim_{(x,y)\to(0,0)}\frac{x^4+y^2}{x^2+y^4}$$

