

CSE-4303/CSE-5365 Computer Graphics Spring 2014 Quiz 1



## NAME:

Time: 7 Minutes

## **NOTES:**

- a. credit is only given to the correct numerical values.
- b. All numerical values must be calculated with three digits of accuracy after the decimal point.
- c. Do not write on the back side of the papers.
- 1. Given the plane P as 4x-3y+5z+32=0 and two points A(8,2,5) and B(8,2,8). Find the equations of plane P after it has have been rotated =90 degrees around AB.

Show the matrices:

- Translate point A to the origin. Line A'B' aligns with the z axis.
- Rotate 90 degrees around z axis.
- Translate point A back to its original coordinates.

1	0	0	8
0	1	0	2
0	0	1	5
0	0	0	1

0	-1	0	0
1	0	0	0
0	0	1	0
0	0	0	1

1	0	0	-8
0	1	0	-2
0	0	1	-5
0	0	0	1

Show the equation of the rotated plane P:

Select the normal vector to the plane V =

Find the normal vector after the transformations (Notice that vectors will not be affected by translations)

1

$\overrightarrow{N'} = R_z \cdot \overrightarrow{N} =$	[0]	-1	0	0]	[4]	]	[3]	
	1	0	0	0	-3		4	
	0	0	1	0	5	=	5	
	0	0	0	1	1		1	



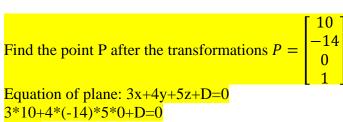
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-8

0 0 1



Select any point on the plane such as P =



D=26

Equation of plane: 3x+4y+5z+26=0