CSE

Computer Graphics
Fall 2016 Quiz 4

UTA

NAME:

Time: 10 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.   The viewing parameters for a parallel projection are given as

VRP(WC)=(3,4,5)   VPN(WC)=(8,6,12)
VUP(WC)=(1,2,3)   PRP (VRC)=(2,5,-5)
u_{min} (VRC) = -4 u_{max} (VRC) = 6
v_{min} (VRC) = 24 v_{max} (VRC) = 26
n_{min} (VRC) = 10 n_{max} (VRC) = 20

Given all other transformations, find the **Shear** matrix which will transform this viewing volume into a unit cube which is bounded by the planes: x=0 ; x=1 ; y=0 ; y=1 ; z=0; z=1

Matrix #2: Rx

1.000	0.000	0.000	0.000
0.000	0.894	-0.447	0.000
0.000	0.447	0.894	0.000
0.000	0.000	0.000	1.000

Matrix #1: Translate

1.000	0.000	0.000	-3.000
0.000	1.000	0.000	-4.000
0.000	0.000	1.000	-5.000
0.000	0.000	0.000	1.000

Matrix #4: Rz

0.417	0.909	0.000	0.000
-0.909	0.417	0.000	0.000
0.000	0.000	1.000	0.000
0.000	0.000	0.000	1.000

Matrix #3: Ry

0.859	0.000	-0.512	0.000
0.000	1.000	0.000	0.000
0.512	0.000	0.859	0.000
0.000	0.000	0.000	1.000

Matrix #6: Translate

1.000	0.000	0.000	4.000
0.000	1.000	0.000	-24.000
0.000	0.000	1.000	-10.000
0.000	0.000	0.000	1.000

Matrix #5: Shear

Matrix #7: Scale

0.100	0.000	0.000	0.000
0.000	0.500	1.000	0.000
0.000	0.000	0.100	0.000
0.000	0.000	0.000	1.000