Mathematics Quiz
ME451: Control Systems

Name

(10 pts) 1.Find the determinant of the matrix below. Show work and enter result in the space provided.

$$\text{Determinant of } \begin{bmatrix} 4 & 0 & 2 & 3 \\ 0 & 2 & 2 & 0 \\ 1 & 0 & 2 & 1 \\ 0 & 0 & 1 & 3 \end{bmatrix} = \boxed{}$$

enter result above

(10 pts) 2.Find the inverse of the matrix below. Show work and enter result in the space provided.

$$\text{Inverse of } \begin{bmatrix} 1 & 2 & 3 \\ 0 & 2 & 1 \\ 0 & 3 & 2 \end{bmatrix} = \begin{bmatrix} & & \\ & & \\ & & \\ & & \\ & & \end{bmatrix}$$

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(10 pts) 3. Complete the indicated operations giving the result in both *"a+bi"* and *"$Re^{i\theta}$"* forms. Watch your units! and enter answer in the appropriate box.

Operation	*"a+bi"*	*"$Re^{i\theta}$"*
(3+2i)+(1-2i)		
(1+2i)-(3+4i)		
$\left(5e^{i(-\pi/2)}\right)\left(2e^{i(\pi)}\right)$		
$\frac{5e^{i\pi}}{2e^{i(-\pi/2)}}$		