21001, Section 03, Linear Algebra and applications
HW 4, DUE THURSDAY, September 27
Instructor: Prof. Artem Zvavitch
GOOD LUCK!!!

Problem 1. *Compute det(A):*

(1) $\begin{bmatrix} 4 & 3 & 2 \\ 3 & -2 & 5 \\ 2 & 4 & 6 \end{bmatrix}$,

(2) $\begin{bmatrix} 4 & 3 & 2 \\ 3 & -2 & 5 \\ 7 & 0 & 7 \end{bmatrix}$,

(3) $\begin{bmatrix} 74 & 83 & 5 & -162 \\ 4 & 3 & 0 & 2 \\ 3 & -2 & 0 & 5 \\ 2 & 4 & 0 & 6 \end{bmatrix}$,

(4) $\begin{bmatrix} 1 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 & 1 \\ 0 & 0 & 0 & 1 & 0 \end{bmatrix}$.

Problem 2. *Find all values of λ for which the determinant of*

$$\begin{pmatrix} \lambda - 1 & 2 \\ 3 & \lambda - 2 \end{pmatrix},$$

is zero.

Problem 3. *Show that if $det(AB) = 0$, then $det(A) = 0$ or $det(B) = 0$.*

Problem 4. *Is $det(AB) = det(BA)$? Justify your answer.*