ALGEBRA 2
PROBLEM SET #11

DUE DATE: OCTOBER 2, 2023

Question 1. Solve the following system of linear equations ***using any method*** (i.e. what is x, y, z?):

$$\begin{aligned} 2x + y + z &= 4 \\ y + z &= 2 \\ z &= 2 \end{aligned}$$

Question 2. Solve the following system of linear equations ***using any method*** (i.e. what is x, y?):

$$\begin{aligned} x + 2y &= 20 \\ 3x + 4y &= 22 \end{aligned}$$

Question 3. Using ***any*** method, solve for the point of intersection between the two equations

$$\begin{aligned} -x + \frac{1}{3}y - \frac{47}{3} &= 0 \\ 6x &= 120 \end{aligned}$$

Question 4. Compute the following determinants:

(a) $\det(\begin{bmatrix} 2 & 0 \\ 2 & 3 \end{bmatrix})$

(b) $\det(\begin{bmatrix} 0 & -1 \\ 1 & 0 \end{bmatrix})$

(c) $\det(\begin{bmatrix} 2 & -1 \\ -1 & -1 \end{bmatrix})$

(d) $\det(\begin{bmatrix} 2023 \end{bmatrix})$

(e) $\det(\begin{bmatrix} 2023 & 17 \\ 1 & 1 \end{bmatrix})$