1.

(a) $\begin{bmatrix} 1 & 0 \\ 1 & 1 \end{bmatrix} + \begin{bmatrix} 4 & -1 \\ 1 & 4 \end{bmatrix}$

(b) $\begin{bmatrix} 2 & 0 \\ 1 & 1 \end{bmatrix} - \begin{bmatrix} 2 & -1 \\ 1 & -2 \end{bmatrix}$

(c) $(-8)\begin{bmatrix} -1 & 0 \\ 2 & 1 \end{bmatrix}$

(d) $\begin{bmatrix} 1 & 0 \\ 1 & 1 \end{bmatrix}\begin{bmatrix} -2 & 1 \\ -1 & 2 \end{bmatrix}$

2. Evaluate the following determinants

$$\begin{vmatrix} c & 4 \\ b & 5 \end{vmatrix}$$

3. For each of the following matrices, use Gaussian elimination method to find the inverse matrix, wherever it exists:

(a) $B = \begin{bmatrix} 4 & -1 \\ 1 & 4 \end{bmatrix}$

(b) $A = \begin{pmatrix} 2 & 1 & 2 \\ 1 & 7 & 3 \\ -4 & 3 & 1 \end{pmatrix}$

3. Find the **magnitude**, **direction** and the **angle** for the following:

(a) $\underset{\text{RS}}{\rightarrow}$ where R = (7,2) S = (-1,-10)

(b) $\underset{\text{PQ}}{\rightarrow}$ where P = (-4,-10) Q = (-5,2)