

Given three matrices

$$A = [1, 2, 3], \quad B = \begin{bmatrix} a \\ b \\ c \end{bmatrix}, \quad C = \begin{bmatrix} 4 & 5 & 6 \\ d & e & f \\ 1 & 0 & 1 \end{bmatrix},$$

perform the following matrix multiplications:

1. (2 points)  $AB =$

2. (4 points)  $BA =$

3. (4 points)  $ACB =$