1. Compute the determinants of

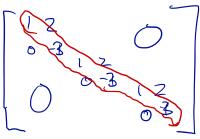
$$A = \begin{bmatrix} 0 & 1 & 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 & 1 & 0 \end{bmatrix}$$

$$B = \begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 0 \\ 2 & 2 & 0 & 0 & 0 & 0 \\ 1 & 1 & 1 & 0 & 0 & 0 \\ 2 & 2 & 2 & 2 & 0 & 0 \\ 1 & 1 & 1 & 1 & 1 & 0 \\ 2 & 2 & 2 & 2 & 2 & 2 \end{bmatrix}$$

$$A = \begin{bmatrix} 0 & 1 & 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 \\ \end{bmatrix} \qquad B = \begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 0 \\ 2 & 2 & 0 & 0 & 0 & 0 \\ 1 & 1 & 1 & 0 & 0 & 0 \\ 2 & 2 & 2 & 2 & 2 & 2 \\ \end{bmatrix} \qquad C = \begin{bmatrix} 1 & 2 & 0 & 0 & 0 & 0 \\ 2 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 2 & 0 & 0 \\ 0 & 0 & 2 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 2 \\ 0 & 0 & 0 & 0 & 2 & 1 \\ \end{bmatrix}.$$

$$|A| = (-1)^3 = -1$$
  
 $|B| = 1.2.1.2.1.2 = 8$ 





$$|C| = |-(-3) \cdot |-(-3) \cdot |-(-3)$$
  
= -27

**2.** Compute the determinant of

$$D = \begin{bmatrix} 2 & 4 & 0 & 0 & 0 & 0 \\ 6 & 3 & 0 & 0 & 0 & 0 \\ 0 & 0 & -1 & -2 & 0 & 0 \\ 0 & 0 & 2 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 5 & 10 \\ 0 & 0 & 0 & 0 & 2 & 1 \end{bmatrix}.$$

$$|D| = 2.3.6 \cdot |D| \cdot |S| \cdot |C| = -30$$

**3.** Compute the determinant of ABCD, where A, B, C and D are as above.