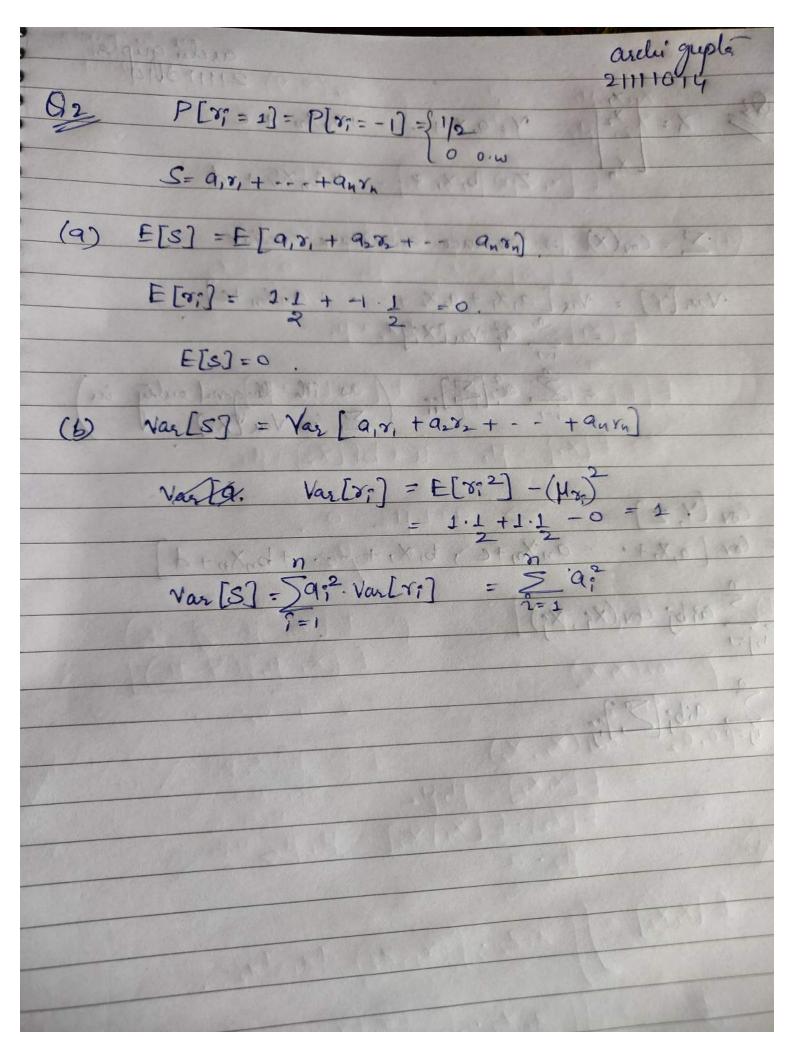
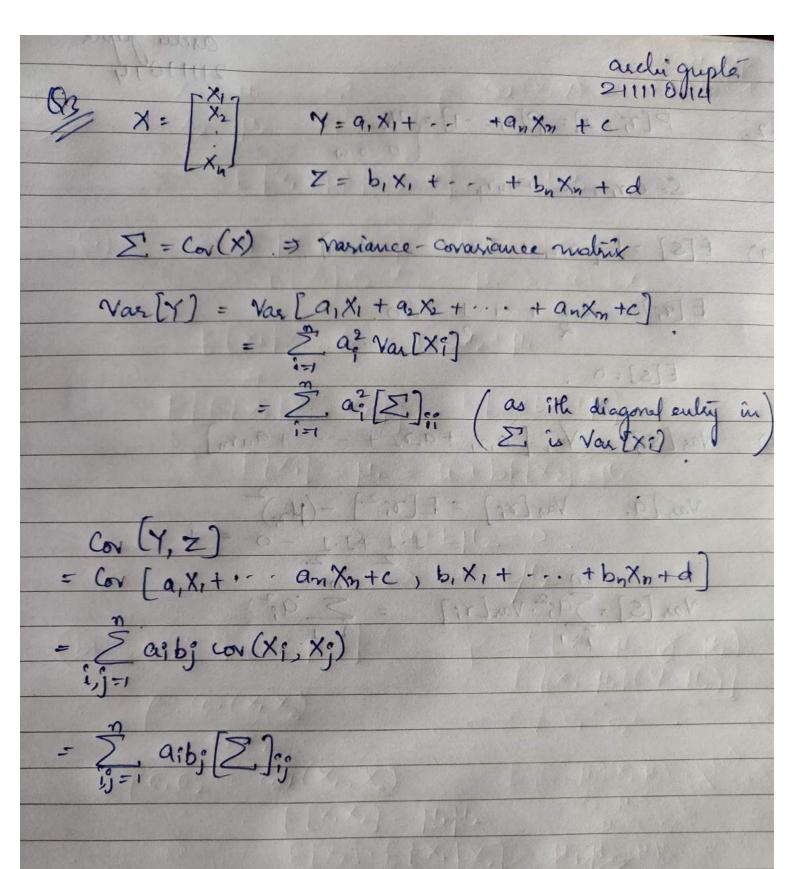
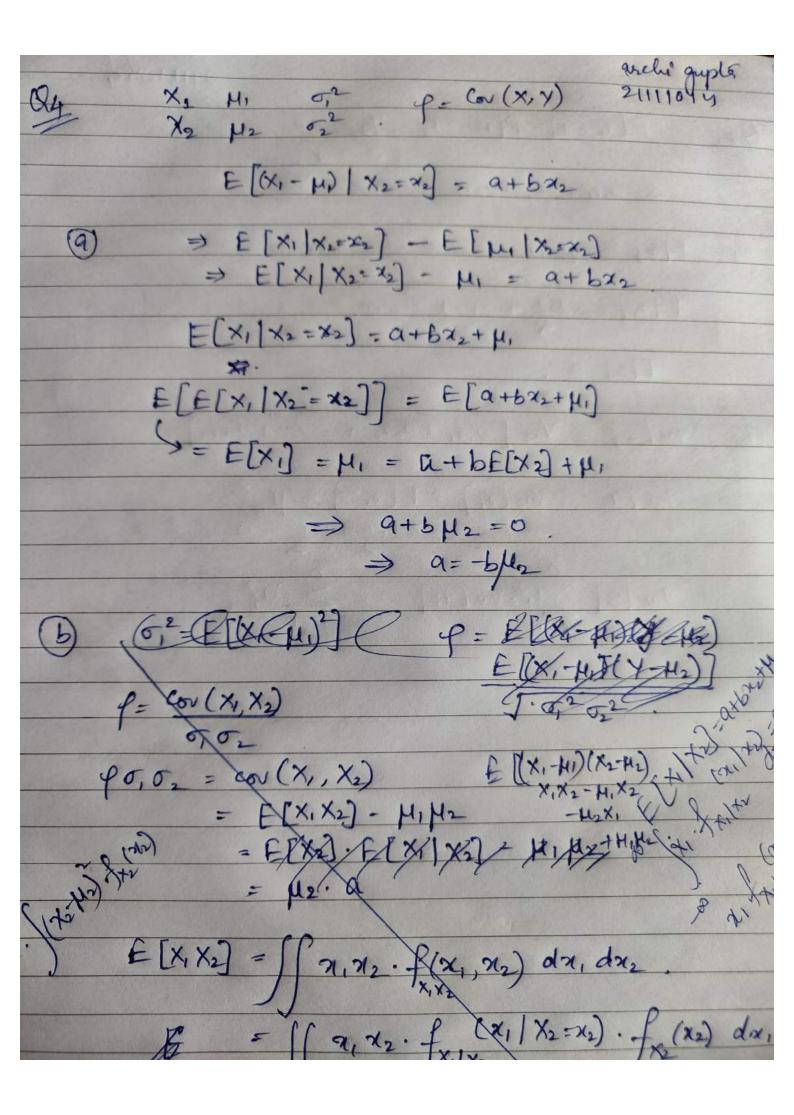
$$Q_1$$
  $X$   $\mu_1 = 2$   $\sigma_1^2 = 4$   $f = 1$  [Independent]  
 $Y$   $\mu_2 = 4$   $\sigma_2^2 = 6$   $f = 1$  [Independent]

$$Z = 3x - 2Y$$
  
 $E[Z] = F[3x - 2Y] = 3E[X] - 2E[Y]$   
 $= 3 \cdot 1 - 2 \cdot 4$   
 $\Rightarrow -5$ 

$$\begin{aligned} \text{Var}[Z] &= E[Z^2] - \mu^2 \\ &= \text{Var}[3x - 2Y] \\ &= 9 \cdot \text{Var}[X] + 4 \cdot \text{Var}[Y] \\ &= 9 \cdot 4 + 4 \cdot 6 . \end{aligned}$$







areli gupla T= Cov (X1, X2) Po, o2 = cor (X1, X2) = E[X, X2] - H, H2 = E[(X,-H1) (X2-HD)] = \int (x, \pi\_2) \cdot \frac{1}{2} \cdot \frac{ = \[ (\hat{x}\_1 - \mu\_1) (\hat{x}\_2 - \mu\_2) \int \text{x}\_1 | \text{x}\_2 \] \frac{(\pi\_1) \text{x}\_2 \dagger \frac{1}{2} \dag = \int (\times\_1 + \frac{1}{12} \cdot \frac{1}{12} = \( \langle (\text{X}\_2 - \mu\_2) \cdot \frac{\gamma\_1}{\chi\_2} \cdot \frac{\gamma\_2}{\chi\_2} \cdot \frac{\gamma\_2}{\gamma\_2} = \[ \begin{aligned} \begin{aligned} & \begin{al = (x2-42). b(x2-42). fx2(x2) dx2 =) b (X2-H2)2 fx(x2) dx2

 $= b \cdot \sigma_2^2$