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a) for class $y=0$ $E[x_1] = (1+1+2+3+3)/5 = 2$ $E[x_2] = (1+1+2+2+3)/5 = 1.8$
 $\text{cov}(x_1, x_2) = E[x_1 x_2] - E[x_1]E[x_2] = (3+6+6+1+2)/5 - 3.6 = 0$ for class $y=1$
 $E[x_1] = (1+2+4+5+5)/5 = 3.4$ $E[x_2] = (4+5+6+6+7)/5 = 5.6$ $\text{cov}(x_1, x_2)$
 $= E[x_1 x_2] - E[x_1]E[x_2] = (30+24+20+10+7)/5 - 19.04 = 18.2 - 19.04 = -0.84$
b) $x^T = (3.5, 2)$ $\sigma = \text{covariance matrix}$ $\mu = \text{vector of expected values}$
c)
d)
e)