1.

$u_1 = (0.3510 + 2.1812 + 0.2415 + (-0.1096) + 0.1544) / 5 = 0.5637$

$u_2 = 1.6843$

$u_3 = -0.4793$

$u_y = 0.5740$

$\sigma_1 = \left(\frac{1}{5} \left[0.3510 - u_1 \right)^2 + (2.1812 - u_1)^2 + (0.2415 - u_1)^2 + (-0.1096 - u_1)^2 + (0.1544 - u_1)^2 \right] \right)^{\frac{1}{2}} = 0.8229$

$\sigma_2 = 0.3924$

$\sigma_3 = 0.9552$

$\sigma_y = 0.6469$

$cov(\text{feature } 1, y) = \frac{1}{5} \left[(0.3510 - u_1)(0.2758 - u_y) + (2.1812 - u_1)(1.4392 - u_y) + \cdots \right]$

$= 0.3188$

$cov(\text{feature } 2, y) = 0.1152$

$cov(\text{feature } 3, y) = 0.4949$

$cor(\text{feature } 1, y) = \dfrac{0.3188}{0.8229 \times 0.6469}$

$$= 0.5988$$

$cor(\text{feature } 2, y) = 0.4537$

$cor(\text{feature } 3, y) = 0.8009$