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1.) Let $X \sim U(-1,1)$ be unif$(-1,1)$

$f_X(x) = 1/2 \quad -1 < x < 1$ and 0 o.w.

$$\text{cov}(X,Y) = E(XY) - E(X)E(Y)$$

$$E[X] - 0 \cdot E(Y)$$

$$= \int_{-1}^{1} \frac{1}{2} x^3 \, dx$$

$$\frac{x^4}{4} \cdot \frac{1}{2} \Big|_{-1}^{1} = \frac{1}{8} - \left(\frac{1}{8}\right) = 0$$

Therefore, since we have a correlation of zero it would be safe to say Y is dependent but also uncorrelated.