

The random variable Y is the sum of two independent observations of the random variable X . The probability generating function $G_Y(t)$ of Y is given by

$$G_Y(t) = \frac{t^2}{(4-3t)^4}.$$

- (a) Find $E(Y)$. [3]
- (b) Write down an expression for the probability generating function of X . [1]
- (c) Find $P(X = 4)$. [3]