

The probability generating function, $G_Y(t)$, of the random variable Y is given by

$$G_Y(t) = 0.04 + 0.2t + 0.37t^2 + 0.3t^3 + 0.09t^4.$$

(a) Find $\text{Var}(Y)$. [4]

The random variable Y is the sum of two independent observations of the random variable X .

(b) Find the probability generating function of X , giving your answer as a polynomial in t . [3]