6 The discrete random variable X has probability generating function $G_X(t)$ given by

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

(a) Find $E(X)$ and $Var(X)$. [5]

The discrete random variable Y has probability generating function $G_Y(t)$ given by

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

The random variable Z is the sum of the random variables X and Y.

(b) Assuming X and Y are independent, find $P(Z > 4)$. [5]

Additional page

If you use the following page to complete the answer to any question, the question number must be clearly shown.