6 Y is a discrete random variable which takes the values 0, 2, 4, … . The probability generating function of Y is given by

$$G_Y(t) = \frac{k}{1-at^2}.$$

(a) Find k in terms of a. [1]

(b) Show that $P(Y > 2) = a^2$. [3]

It is now given that $a = 0.2$.

(c) Find the value of $E(Y)$. [2]

Additional page

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