2. When a piece of buttered toast is dropped, the probability that it lands butter side up is p

Two identical pieces of buttered toast are dropped independently in the same way.

The random variable T represents the number of pieces that land butter side up, so that T can take the value 0, 1 or 2

(a) Find $P(T = 0)$, giving your answer in terms of p

(1)

(b) Show that the distribution of T is not discrete uniform.

(3)