11 In this question you must show detailed reasoning.

A biased four-sided spinner has edges numbered 1, 2, 3, 4. When the spinner is spun, the probability that it will land on the edge numbered X is given by

$$P(X=x)=\begin{cases}\frac{1}{2}-\frac{1}{10}x & x=1,2,3,4,\\ 0 & \text{otherwise.}\end{cases}$$

(a) Draw a table showing the probability distribution of X. **[1]**

The spinner is spun three times and the value of X is noted each time.

(b) Find the probability that the third value of X is greater than the sum of the first two values of X. **[3]**