Answer **all six** questions from this section.
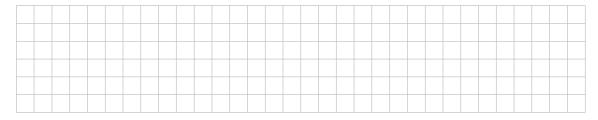

Question 1   **(25 marks)**

The random variable X has a discrete distribution. The probability that it takes a value other than 13, 14, 15 or 16 is negligible.

(a) Complete the probability distribution table below and hence calculate $E(X)$, the expected value of X.

x	13	14	15	16
$P(X = x)$	0·383	0·575		0·004

(b) If X is the age, in complete years, on 1 January 2010 of a student selected at random from among all second-year students in Irish schools, explain what $E(X)$ represents.

(c) If ten students are selected at random from this population, find the probability that exactly six of them were 14 years old on 1 January 2010. Give your answer correct to three significant figures.