2. The discrete random variable X has probability function $\mathrm{p}(x)$ and cumulative distribution function $\mathrm{F}(x)$ given in the table below.

x	1	2	3	4	5
$\mathrm{p}(x)$	0.10	a	0.28	c	0.24
$\mathrm{F}(x)$	0.10	0.26	b	0.76	d

(a) Write down the value of d

(1)

(b) Find the values of a, b and c

(3)

(c) Write down the value of $\mathrm{P}(X > 4)$

(1)

Two independent observations, X_1 and X_2, are taken from the distribution of X.

(d) Find the probability that X_1 and X_2 are both odd.

(2)

Given that X_1 and X_2 are both odd,

(e) find the probability that the sum of X_1 and X_2 is 6
Give your answer to 3 significant figures.

(3)

(Total for Question 2 is 10 marks)