An organisation runs courses to train students to become engineers. These students are taught in groups of 8. The director of the organisation claims that on average 60% of the students in a group achieve a pass. A random sample of 150 groups of 8 students is chosen. The following table shows the observed frequencies together with some of the expected frequencies using the appropriate binomial distribution.

Number of passes per group	0	1	2	3	4	5	6	7	8
Observed frequency	0	0	8	24	45	36	26	10	1
Expected frequency	p	1.180	6.193	18.579	34.836	q	r	13.437	2.519

(a) Find the values of p, q and r giving your answers correct to 3 decimal places. [2]

(b) Carry out a goodness of fit test, at the 10% significance level, to test whether there is evidence to reject the director's claim. [6]