

- 11** It is known that, under the standard treatment for a certain disease, 9.7% of patients with the disease experience side effects within one year.

In a trial of a new treatment, a random sample of 450 patients with this disease was selected and the number X who experienced side effects within one year was noted.

- (a)** State one assumption needed in order to use a binomial model for X . **[1]**

It was found that 51 of the 450 patients experienced side effects within one year.

- (b)** Test, at the 10% significance level, whether the proportion of patients experiencing side effects within one year is greater under the new treatment than under the standard treatment. **[7]**