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7. A drugs company claims that 75% of patients suffering from depression recover when treated with a new drug.

A random sample of 10 patients with depression is taken from a doctor's records.

(a) Write down a suitable distribution to model the number of patients in this sample who recover when treated with the new drug. (2)

Given that the claim is correct,

(b) find the probability that the treatment will be successful for exactly 6 patients. (2)

The doctor believes that the claim is incorrect and the percentage who will recover is lower. From her records she took a random sample of 20 patients who had been treated with the new drug. She found that 13 had recovered.

(c) Stating your hypotheses clearly, test, at the 5% level of significance, the doctor's belief. (6)

(d) From a sample of size 20, find the greatest number of patients who need to recover for the test in part (c) to be significant at the 1% level. (4)

Horizontal lines for writing answers.



