5   Hebe attempts a crossword puzzle every day. The number of puzzles she completes in a week (7 days) is denoted by X.

(i) State two conditions that are required for X to have a binomial distribution. [2]

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On average, Hebe completes 7 out of 10 of these puzzles.

(ii) Use a binomial distribution to find the probability that Hebe completes at least 5 puzzles in a week. [3]

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(iii) Use a binomial distribution to find the probability that, over the next 10 weeks, Hebe completes 4 or fewer puzzles in exactly 3 of the 10 weeks. [3]

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