6 Pack *A* consists of ten cards numbered 0, 0, 1, 1, 1, 1, 1, 3, 3, 3. Pack *B* consists of six cards numbered 0, 0, 2, 2, 2, 2. One card is chosen at random from each pack. The random variable *X* is defined as the sum of the two numbers on the cards.

(i) Show that $P(X = 2) = \frac{2}{15}$. [2]

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(ii) Draw up the probability distribution table for *X*. [4]

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(iii) Given that $X = 3$, find the probability that the card chosen from pack A is a 1. [3]

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