6 DO NOT USE A CALCULATOR IN THIS QUESTION.

Write $(5-\sqrt{3})(\sqrt{6}+\sqrt{2})^{-2}$ in the form $a+b\sqrt{3}$, where a and b are constants. [5]

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7 A class of 10 students includes Abby and Ben.

(a) A group of 5 students is to be selected from the class. Find the number of possible groups in the following cases.

(i) There are no restrictions. [1]

(ii) The group includes both Abby and Ben. [2]

(iii) The group includes either Abby or Ben, but not both. [2]

(b) All 10 students are arranged in a line. How many arrangements are possible if there are exactly three students between Abby and Ben? [3]