2: Students in class *A* and class *B* sit a statistics test.

There are 24 students in class *A* and 30 students in class *B*

The marks, x, for students in each class are summarised in the table below.

	n	$\bar{x}$	$\sum x^2$
Class *A*	24	47	66 876
Class *B*	30	b	73 826

The two classes are combined into one group of 54 students.
The mean mark for all 54 students is 45

(a) Show that $b = 43.4$

(2)

(b) Find the standard deviation of the marks for all 54 students.

(2)

Following moderation, each student in class *B* has their mark increased by 2

(c) Without further calculations state, giving a reason in each case, the effect this will have on

(i) the variance of the marks for class *B*

(ii) the mean mark for all 54 students

(iii) the standard deviation of the marks for all 54 students.

(3)

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Question 2 continued

(Total for Question 2 is 7 marks)