

- 7 (a) Two real numbers are denoted by a and b .
- (i) Write down expressions for the following.
- The mean of the squares of a and b
 - The square of the mean of a and b [1]
- (ii) Prove that the mean of the squares of a and b is greater than or equal to the square of their mean. [3]
- (b) You are given that the result in part (a)(ii) is true for any two or more real numbers.
- Explain what this result shows about the variance of a set of data. [1]