A practical class which is conducted in Cockcroft 4 makes use of 10 DECstations and 5 PWFs. It is known that the probability of any particular DECstation failing during the class is $a$ and the probability of any particular PWF failing during the class is $b$. All failures may be assumed to be independent.

After the most recent class the demonstrator reported that two workstations had failed. Write expressions for:

(a) the probability that both failures were of DECstations [5 marks]

(b) the probability that one DECstation failed and one PWF failed [5 marks]

(c) the probability that both failures were of PWFs [5 marks]

Hence or otherwise show that if $a = b$ the probabilities in the three cases are respectively $9/21$, $10/21$ and $2/21$. [5 marks]