8 **(a)** A team of 6 people is to be chosen from 10 people. Two of the people are sisters who must not be separated. Find the number of different teams that can be formed. [3]

(b) A 6-character password is to be chosen from the following characters.

Digits	2	4	8
Letters	*x*	*y*	*z*
Symbols	*	#	!

No character may be used more than once in any password. Find the number of different passwords that may be chosen if

(i) there are no other restrictions, [1]

(ii) the password starts with two letters and ends with two digits. [3]

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9 The normal to the curve $y = \dfrac{\ln(3x^2 + 2)}{x + 1}$, at the point A on the curve where $x = 0$, meets the x-axis at point B. Point C has coordinates $(0, 3\ln 2)$. Find the gradient of the line BC in terms of $\ln 2$. [9]