4 **(a)** A team of 10 players is to be chosen from 15 players.

(i) Find the number of different teams that can be chosen if there are no restrictions. [1]

The 15 players include 3 sisters who must **not** be separated.

(ii) Find the number of different teams that can be chosen. [3]

(b) A 6-digit number is to be formed using the digits 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9.
The 6-digit number cannot start with 0 and all six digits must be different.

Find how many 6-digit numbers can be formed if the 6-digit number is even. [3]

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5 When e^{y} is plotted against x^2, a straight-line graph with gradient -3 is obtained. The line passes through the point $(4.30, 5.85)$.

(a) Find y in terms of x. [4]

(b) Find the values of x for which y exists. [3]

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