5 **(a)** A 4-digit code is to be formed from the digits 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9. No digit may be used more than once in any code. A code may start with 0.

(i) Find how many codes can be formed. [1]

(ii) Find how many codes form an odd number. [1]

(iii) Find how many codes form a number greater than 1000. [2]

(b) A team of 9 people is to be chosen from a group of 15 people. The group includes a family of 4 people who must not be separated. Find the number of teams that can be chosen. [3]

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6 **(a)** Write $3\lg x - \frac{1}{2}\lg 4 + 2$ as a single logarithm to base 10. [3]

(b) Solve the equation $2\log_a 4 - 3\log_4 a - 5 = 0$, giving your answers in exact form. [5]