10 **(a)** A class contains 7 girls and 8 boys. A group of 6 is selected from the class. The group must contain at least 3 girls and at least 2 boys. Find the number of different groups that can be selected. [3]

(b) A 5-character code is to be formed from the following characters.

Letters	A	B	C	D	E	F
Numbers	1	2	3			

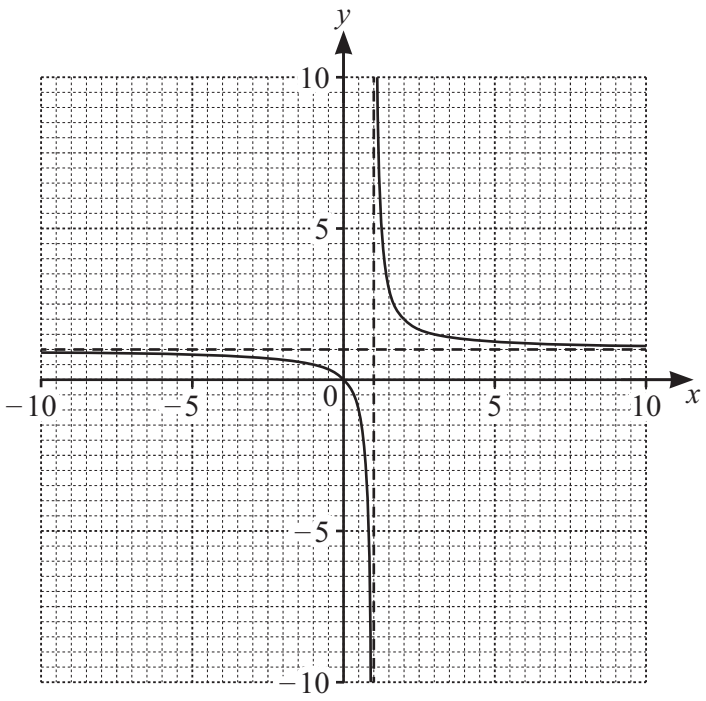
No character may be used more than once in any code. The characters may be arranged in any order.

Find the number of different codes that can be formed using 4 letters and 1 number. [3]

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11 **(a)** $f(x) = \frac{x}{x-1}$ for $-10 \leqslant x \leqslant 10, x \neq 1$.

The diagram shows the graph of $y = f(x)$.



(i) Use the diagram to explain why f is a function. [1]

(ii) Find $ff(x)$, giving your answer in its simplest form. [2]

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