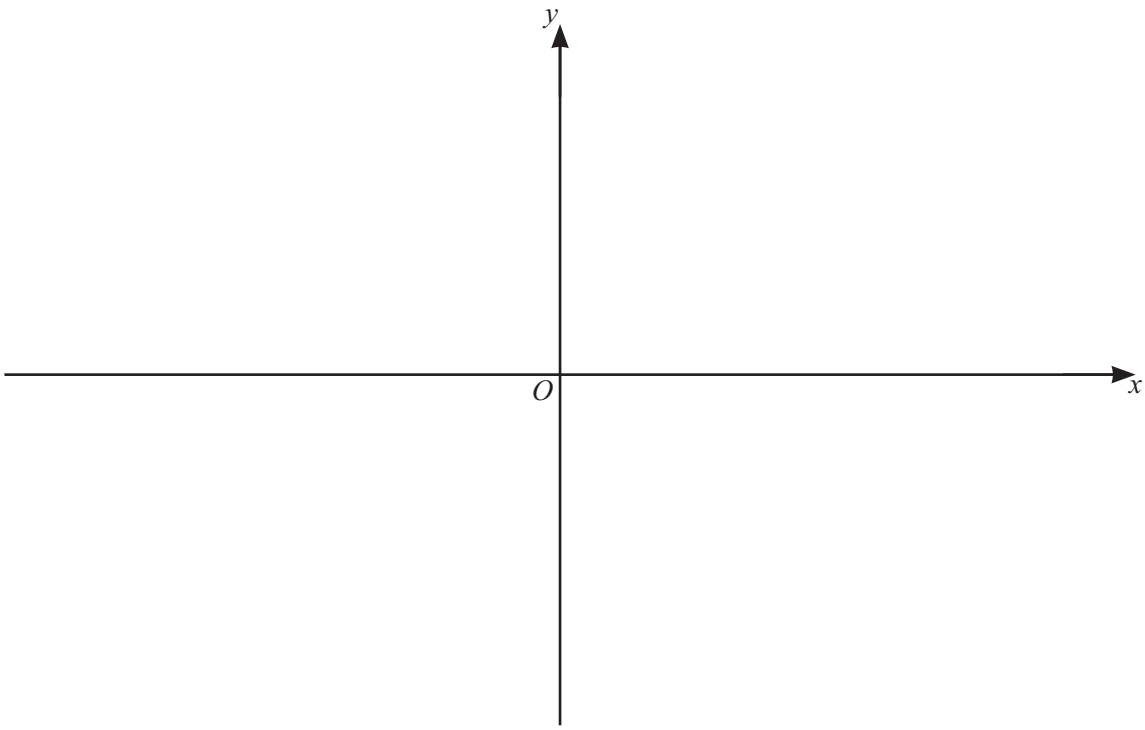
Calculators must **not** be used in this paper.

1 **(a)** On the axes, sketch the graph of $y = (1-x)(x-5)(2x-5)$, stating the intercepts with the axes. [3]



(b) Hence solve the inequality $(1-x)(x-5)(2x-5) \leqslant 0$. [2]

DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN

2 The polynomial p is such that $p(x) = 2x^3 + ax^2 + 13x + b$, where a and b are integers.
It is given that $x + 2$ is a factor of $p(x)$.
When $p(x)$ is divided by $x + 1$ there is a remainder of 6.

(a) Find the values of a and b. [4]

(b) Show that the equation $p(x) = 0$ has only one real root. [3]

DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN