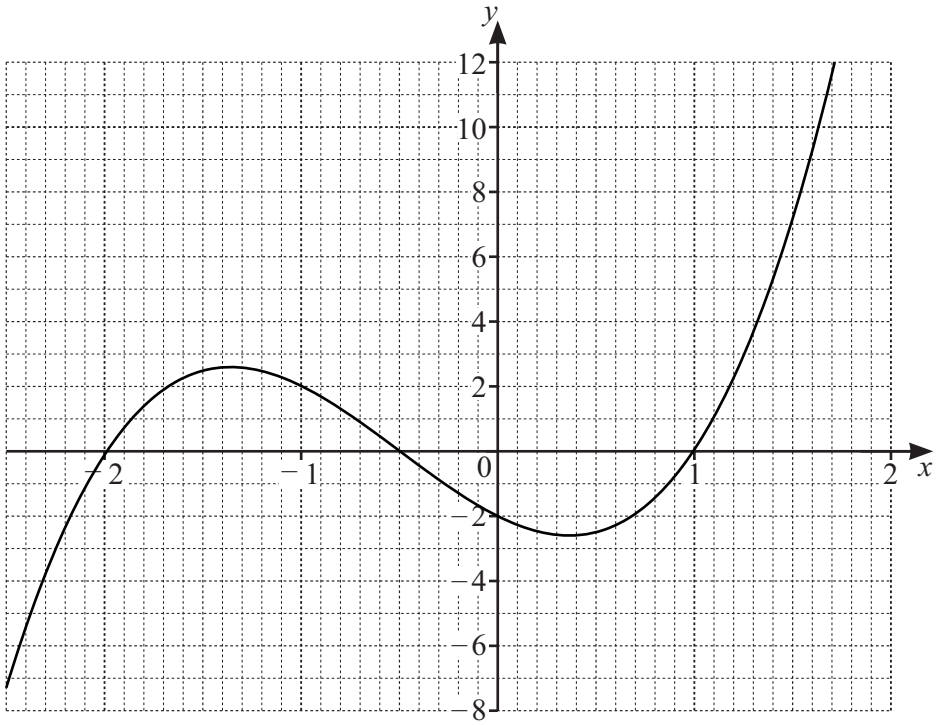
Calculators must **not** be used in this paper.

1 (a)



The diagram shows the graph of $y = (2x + a)(x + b)(x + c)$ where a, b and c are integers.

Find values for a, b and c. [2]

(b) Use the graph to find the values of x for which $y \geqslant 2$. [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

2 Find the values of k for which the equation $x^2 + 4kx + k + 3 = 0$ has two equal roots. [4]

3 The polynomial p is such that $\mathrm{p}(x) = x^3 + Ax + 30$, where A is a constant.
When $\mathrm{p}(x)$ is divided by $x + 2$ the remainder is 84.

Write $\mathrm{p}(x)$ as a product of linear factors. [5]

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