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

5 The polynomial p is such that $\mathrm{p}(x) = ax^3 + bx^2 - 19x + c$, where a, b and c are integers. It is given that $x+2$ is a factor of $\mathrm{p}(x)$. When $\mathrm{p}(x)$ is divided by $x+1$ the remainder is 20.

(a) Show that $7a - 3b = 39$. [3]

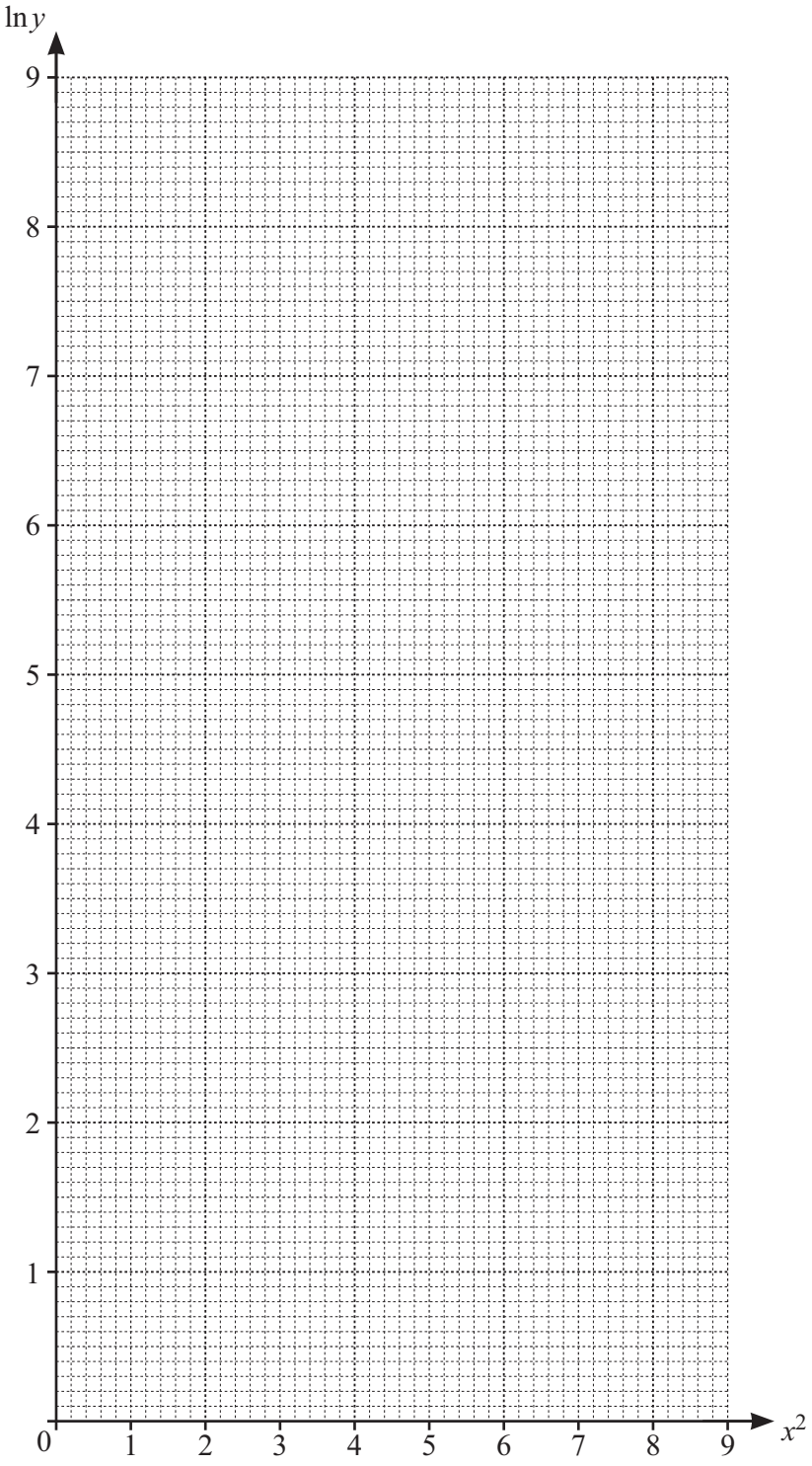
It is also given that when $\mathrm{p}'(x)$ is divided by $x-1$ the remainder is 1.

(b) Find the values of a, b and c. [3]

6 The table shows the variables x and y which are related by the equation $y = Ab^{x^2}$, where A and b are constants.

x	1	1.5	2	2.5	3
y	14	33.3	112	532.8	3584

(a) Use the data to draw a straight line graph of $\ln y$ against x^2. [2]



© UCLES 2024

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