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5 Solutions to this question by accurate drawing will not be accepted.

A circle has centre (4, 2) and meets the x-axis at $(-2, 0)$.

(a) Find the equation of the circle. [2]

(b) Find, in exact form, the coordinates of the points where the circle meets the y-axis. [3]

6 Variables x and y are such that when $\ln y$ is plotted against x a straight-line graph is obtained. The line passes through the points $(1, \ln 15)$ and $(2, \ln 75)$.

Show that $y = Ab^x$ where A and b are integers to be found. [4]

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