

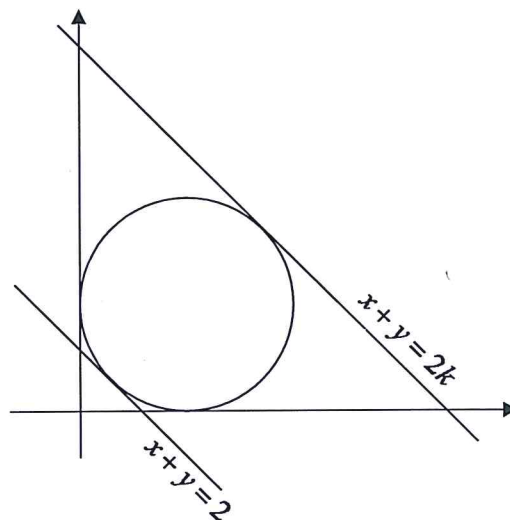
LCH 2012 Paper 2, Q3

Question 3

(25 marks)

The circle shown in the diagram has, as tangents, the x -axis, the y -axis, the line $x + y = 2$ and the line $x + y = 2k$, where $k > 1$.

Find the value of k .



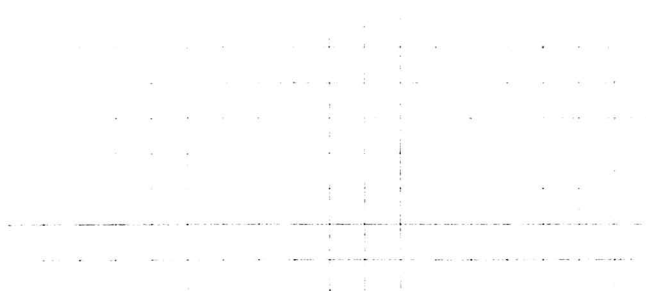
Question 4

(25 marks)

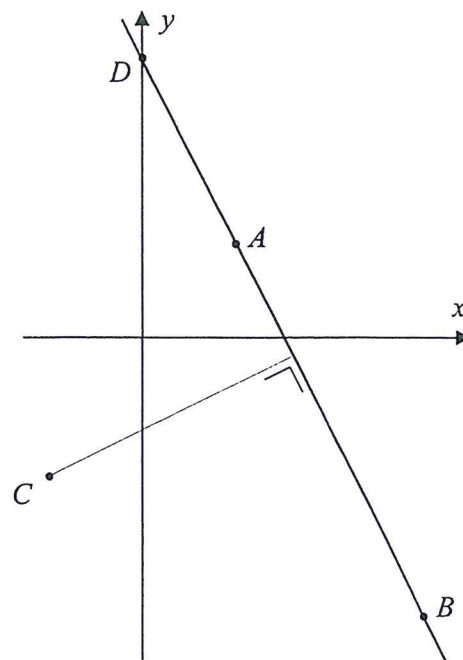
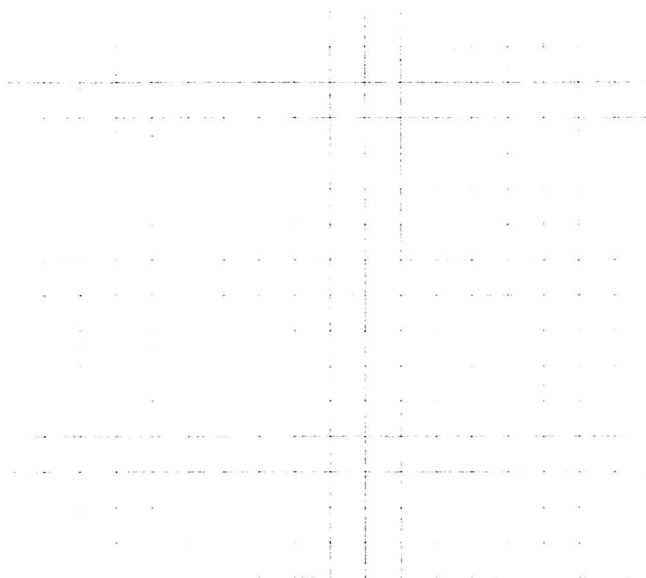
- (a) Write down the equation of the circle with centre $(-3, 2)$ and radius 4.

- (b) A circle has equation $x^2 + y^2 - 2x + 4y - 15 = 0$.
Find the values of m for which the line $mx + 2y - 7 = 0$ is a tangent to this circle.

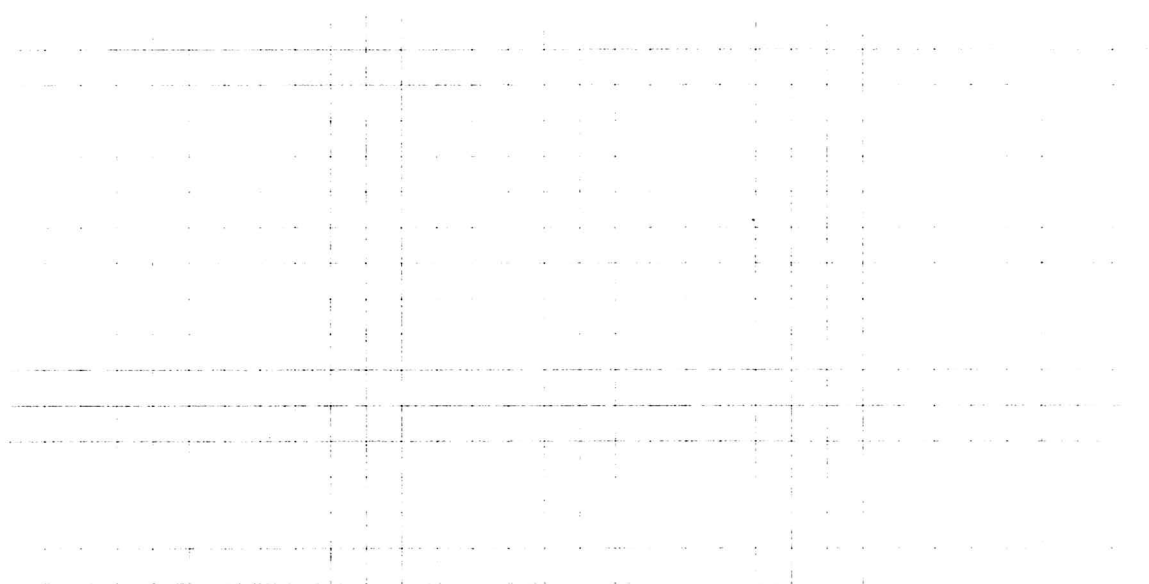
- (b) The line AB intersects the y -axis at D .
Find the coordinates of D .



- (c) Find the perpendicular distance from C to AB .



- (d) Hence, find the area of the triangle ADC .



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