## YEAR 12 EXCELLENCE QUESTION ON COORDINATE GEOMETRY.

Using logical reasoning involving coordinate geometry techniques find the shortest distance from the point C(10,7) to the line joining A(0,1) and B(3,13).

(If you are completely stuck for ideas, use the steps given at the bottom of the page.)



## HINTS:

1. Find the equation of AB

- 2. Find the equation of the line perpendicular to AB through C
- 3. Find the intersection point, N
- 4. Calculate CN

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I the intersection point, N by Graphics calc = N(2,9)

4. Calculate CN  $CN^2 = 2^2 + 8^2 so$   $CN = \sqrt{68} \approx 8.246$ 

## MORE EXAMPLES.

Coords of A	Coords of B	Coords of point P	DISTANCE
(2,9)	(7, 14)	(11, 6)	8.49
(0, 6)	(10, 11)	(7, 2)	6.71
(0, 12)	(9,9)	(5, 3)	6.96
(2, 12)	(10, 8)	(4, 2)	8.05

CN = 6.26

Find the distance of C(10, 7) from AB. Where A is (2, 5) and B is (6, 13)

