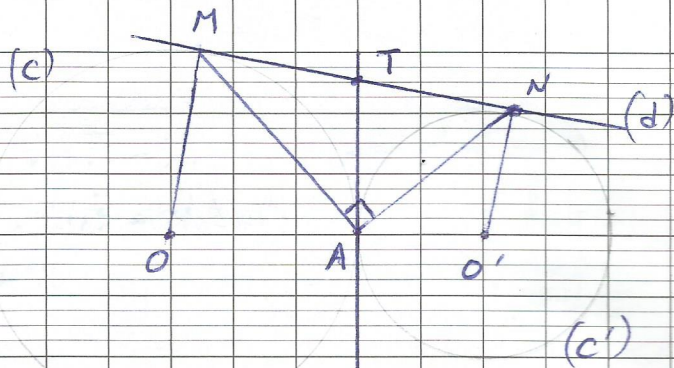


4. T is the intersection pt. of the two tangents to (C) at M & A (given)



Then, $TM = TA$ --- (i)

(Tangent theorem: exterior pt from which the two tangents are drawn, is equidistant from pts of tangency)

T is the intersection pt of two tangents to (C') at A & N (given)

So, $TN = TA$ --- (ii) (tangent theorem: (i))

Hence, $TN = TM = TA$ (by comparing (i) & (ii))

Thus, $\triangle MAN$ is right at A (Converse of median relative to hypotenuse)

(a)

2nd exercise

$$\begin{aligned} \rightarrow p(x) &= (3x-1)(x-5) - x^2 + 25 \\ &= \underline{3x^2} - \underline{15x} - \underline{x} + \underline{5} - \underline{x^2} + \underline{25} \end{aligned}$$

$$\text{Thus, } p(x) = 2x^2 - 16x + 30.$$

$$\begin{aligned} 2) \quad p(x) &= (3x-1)(x-5) - x^2 + 25 \\ &= (3x-1)(x-5) - (x^2 - 5^2) \\ &= (3x-1)(x-5) - (x-5)(x+5) \\ &= (x-5) \left[\underline{3x-1} - \underline{x-5} \right] \end{aligned}$$

$$p(x) = (x-5)(2x-6)$$

To find roots $p(x)$ means solve $p(x) = 0$.

$$\text{So, } (x-5)(2x-6) = 0$$

means, $x-5=0$ OR $2x-6=0$

Thus, roots of $p(x)$ are $x=5$ & $x=3$.