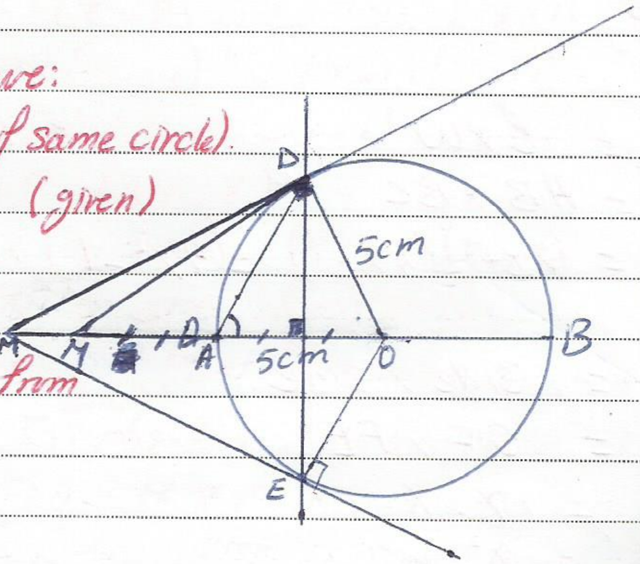
5th- exercise:

1a. i) In Δ AOD we have:

OA = OD (radii of same circle).

D belong to [AO] (given)



$\Rightarrow$ D is equidistant from A & O.

$\Rightarrow$ DA = DO

Hence, DA = DO = AO (by sub)

So, Δ ADO is equilateral Δ (having three equal sides)

$\therefore$ $D\hat{A}O = 60°$ (angle in an equilateral Δ).

ii). A * [MO] (by symmetry)

$\Rightarrow$ [DA] is a median

DA = AO. (sides of equilateral Δ).

and MA = AO (by midpt)

$\Rightarrow$ DA = AO = AM (by sub).

$\therefore$ Δ MDO is right at D (mid pt theorem in right Δ $DA = \frac{1}{2} MO$).

b. $M\hat{D}O = 90°$ (proved).

$\Rightarrow$ (MD) $\perp$ (OD) at D

[OD] radius (given

point D belong to (C).

$\therefore$ (AD) is tangent to (C) at (D).

E belong to [AO].

E belong (C)