التاريخ:

Area $\triangle DOB = \frac{leg_1 \times leg_2}{2}$

$= \frac{DB \times OB}{2}$

$= \frac{R\sqrt{3} \times R}{2}$

$= \frac{R^2\sqrt{3}}{2}$

Area of $\triangle CDB = \frac{leg_1 \times leg_2}{2}$

$= \frac{BD \times CB}{2}$

$= \frac{R\sqrt{3}}{2} \times \frac{4R}{3}$

$= \frac{4R^2\sqrt{3}}{6}$

Thus, Area of $\triangle COD = \frac{4R^2\sqrt{3}}{6} - \frac{R^2\sqrt{3}}{2}$

$= \frac{R^2\sqrt{3} - 3R^2\sqrt{3}}{6}$

$= \frac{R^2\sqrt{3}}{6}$ units of area.

2^{nd} way: Area COD $= \frac{base \times height}{2} = \frac{CO \times BD}{2} = \frac{R}{3} \times \frac{R\sqrt{3}}{2} = \frac{R^2\sqrt{3}}{6} \cdot u^2$

3) In quadrilateral MNOB we have

. M is the orthogonal projection of B on [CD] (given)

So, $B\hat{M}C = 90°$

. The perp. bisector of [AB] at O cuts [CD] in N (given)

So, $N\hat{O}B = 90°$

hence, quadrilateral MNOB is formed of two right $\triangle$'s Sharing the same hypotenuse [NB]

Thus, pts M, N, O + B belong to the same circle of center the midpt of its diameter [NB].

4) [DE) is tangent to (c) at E (given)

[DB) " " to (c) at B (given)

So, D is an exterior pt from which the two tangents [DB) + [DE) are drawn to (c) of center O at B + E respectively

Thus, [DO), is the bisector of $E\hat{D}B$ (tangent theorem:

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