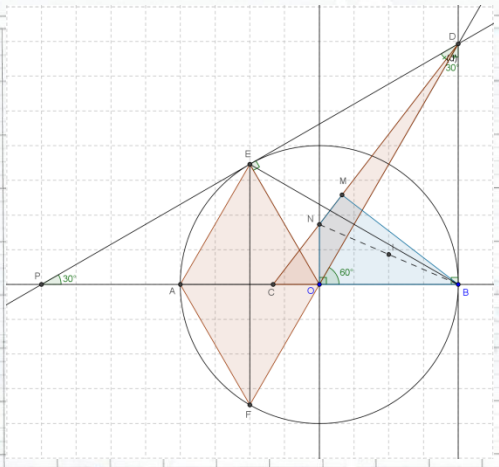
Date:

4th Exercise:

1) fig ✓



2) [AB] is a diameter of (C) with center O (given)

a) C is a pt of [AO] (given)

Then, A, C, O & B are collinear

but $AB = AC + BC$

$2R = \frac{2}{3}R + BC$

Thus, $BC = \frac{6R - 2R}{3} = \frac{4R}{3}$ units of length

b) In $\triangle DOB$ we have:

(d) is tangent to (C) at B (given)

So, $D\hat{B}O = 90°$ (tangent theorem: angle formed between a tangent and a radius)

but $D\hat{O}B = 60°$ (given)

Thus, $\triangle DOB$ is semi-equilateral triangle at B (having 60° & 90°)

Now, $DB = \sqrt{3}$ smallest side (relation between sides facing 60° & 90°)

$= \sqrt{3} \times OB$

Thus, $DB = R\sqrt{3}$ units of length

1st way:

c) Area of $\triangle COD$ = Area of $\triangle CDB$ − Area of $\triangle ODB$.