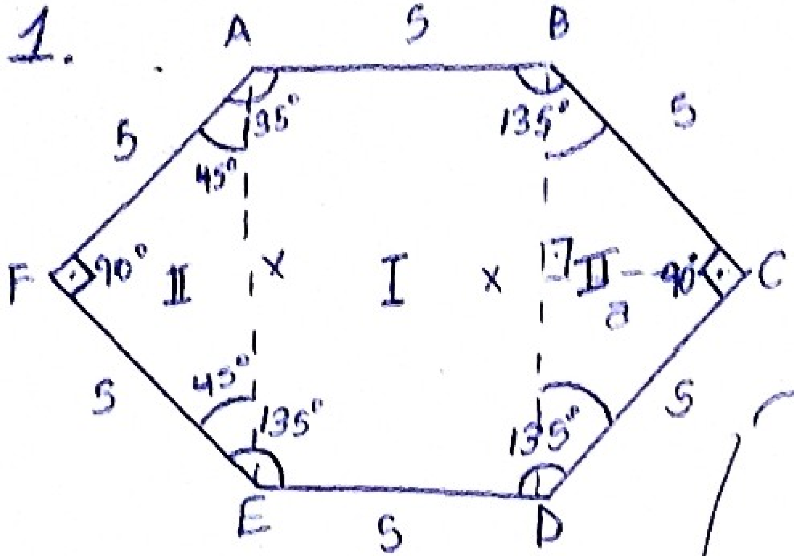
1.



Soma dos âng. internos

$S_i = 180°(n-2)$

$S_i = 180°(6-2) = 720°$

$720° - 540° = 980°$

$A_{HEX} = A_I + 2 . A_{II}$

$A_{HEX} = 5 . x + \cancel{2} . \left(\frac{x . a}{\cancel{2}}\right)$

$A_{HEX} = 5 . x + x . a$

$A_{HEX} = 5 . 5\sqrt{2} + 5\sqrt{2} . \left(\frac{5\sqrt{2}}{2}\right)$

$A_{HEX} = 25\sqrt{2} + \frac{25 . \cancel{2}}{\cancel{2}}$

$A_{HEX} = 25 . (\sqrt{2} + 1)$

ΔBCD:

$x^2 = 5^2 + 5^2$

$x = \sqrt{50} = 5\sqrt{2}$

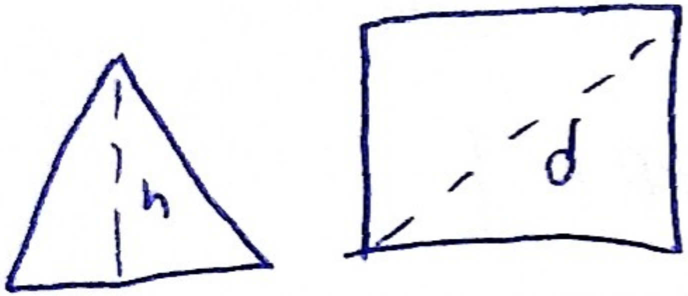
$5^2 = \frac{x}{2} + a$

$25 = \left(\frac{5\sqrt{2}}{2}\right)^2 + a^2$

$25 = \frac{25 . 2}{4} + \frac{a^2}{1} \rightarrow 25 = \frac{50 + 4a^2}{4}$

$100 = 50 + 4a^2$

$a^2 = \frac{50}{4} \Rightarrow a = \sqrt{\frac{50}{4}} = \frac{5\sqrt{2}}{2}$

2. 

$h = d \longrightarrow \frac{8\sqrt{3}}{2} = x\sqrt{2}$

$A_{T.EQ} = \frac{l^2\sqrt{3}}{4}$

$4\sqrt{3} = x\sqrt{2}$

$x = \frac{4\sqrt{6}}{2} = 2\sqrt{6}$

$16\sqrt{3} = \frac{l^2\sqrt{3}}{4}$

B

$64\cancel{\sqrt{3}} = l^2\cancel{\sqrt{3}}$

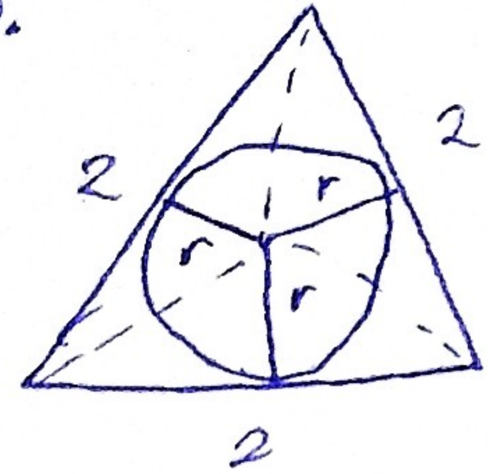
$A_Q = x^2$

$l = 8m$

$A_Q = (2\sqrt{6})^2$

$A_Q = 4.6 = 24m^2$

3.



Assumindo o ponto P como incentro/baricentro

$$\frac{r}{\sqrt{3}-r} = \frac{1}{2} \Rightarrow 2r = \sqrt{3} - r$$

$$3r = \sqrt{3}$$

$$r = \frac{\sqrt{3}}{3}$$

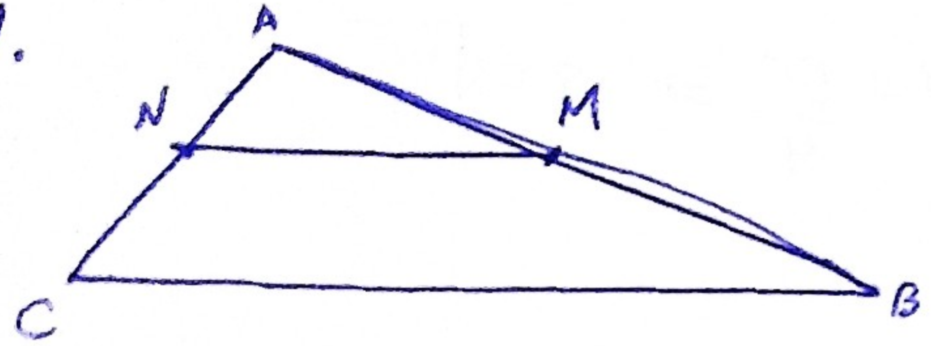
Soma da ~~p~~ P até os lados

$$S = r + r + r$$

$$S = \frac{\cancel{3}\sqrt{3}}{\cancel{3}} = \sqrt{3}$$

(B)

4.



$\overline{AM} = \dfrac{\overline{AB}}{2}$ $\qquad \dfrac{\overline{AB}}{\dfrac{\overline{AB}}{2}} = K \Rightarrow K = 2$

$\dfrac{A_{ABC}}{A_{AMN}} = K^2 = 2^2 = 4 \Rightarrow \dfrac{96}{A_{AMN}} = 4$

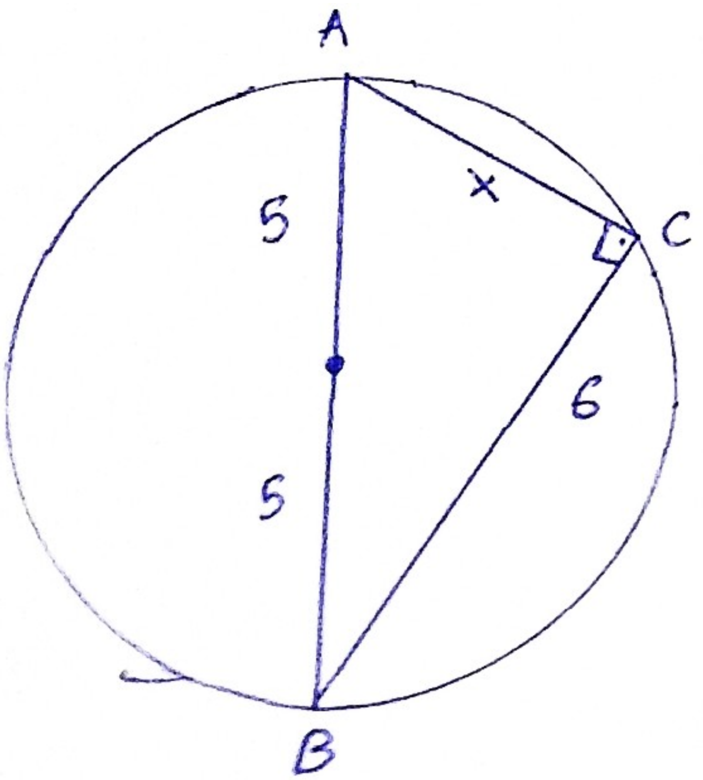
$A_{AMN} = 24m^2$

$A_{BMNC} = A_{ABC} - A_{AMN}$

$A_{BMNC} = 96 - 24$

$A_{BMNC} = 72m^2$

5.



Se um dos lados do triângulo for o diâmetro da circunferência circunscrita, então:

$$10^2 = x^2 + 6^2$$

$$100 = x^2 + 36$$

$$x = \sqrt{64} = 8$$

A

$$A_{ABC} = \frac{b.h}{2} \Rightarrow \frac{6.8}{2} = 24\,cm^2$$

6. $A_{T.EQ.} = \dfrac{\ell^2\sqrt{3}}{4} \longrightarrow A_{TEQ} = \dfrac{4^{\cancel{2}}\sqrt{3}}{\cancel{4}} = 4\sqrt{3}$

Dentro de um hexágono regular, possui 6 triângulos equiláteros.

$A^2 = (4\sqrt{3})^2$

$A^2 = 16.3 = \boxed{48}$