Áreas de Polígonos - CT 1317

1)

$(n-2)\,180°$

$(6-2)\,180° = 720°$

$A+B+D+E = 4 \cdot 135 = 540$

$C, F = 90°$

AE:

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

$x^2 = 50$

$x = 5\sqrt{2}$

ABDE:

$A = 5 \cdot 5\sqrt{2}$

$A = 25\sqrt{2}$

$h = \frac{(5 \times 5)}{5\sqrt{2}}$

$Ar\,\Delta = \frac{(5\sqrt{2}) \cdot (5\sqrt{2}/2)}{2}$

$Ar\,\Delta = \frac{25}{2}$

$Ar\,Hex = 2\left(\frac{25}{2}\right) + 25\sqrt{2}$

$Ar\,Hex = 25 + 25\sqrt{2}$

$Ar\,Hex = 25(\sqrt{2}+1)$

2) Área triangulo equilátero.

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

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

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

$l = \sqrt{64} = 8$

$h = \frac{l\sqrt{3}}{2}$

$h = \frac{8\sqrt{3}}{2}$

$h = 4\sqrt{3}$

$H = d$

$d = l\sqrt{2}$

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

$l = 4\sqrt{6}/2$

$l = 2\sqrt{6}$

Área quadrado:

$A = l^2$

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

$A = 4 \cdot 6$

$A = 24\ m^2$

3)

h_1, h_2, h_3 = distancias P.

$h_1 + h_2 + h_3 = ?$

Vertices ABC = APC, APB e BPC.

$\overline{APC} + \overline{APB} + \overline{BPC} = Area$

$\overline{APC} = \frac{2h_1}{2}$

$\overline{APB} = \frac{2h_2}{2}$

$\overline{BPC} = \frac{2h_3}{2}$

$\frac{2h_1}{2} + \frac{2h_2}{2} + \frac{2h_3}{2} = (\overline{APC} + \overline{APB} + \overline{BPC})$

$\overline{ABC} = \sqrt{3}$

então

$h_1 + h_2 + h_3 = \sqrt{3}$

5) AB = 5

lado AB = 10
lado BC = 6

$H^2 = 6^2 + AC^2$
$100 = 36 + AC^2$
$64 = AC$
$AC = 8$

Área $\Delta = \frac{B \cdot h}{2}$

$\frac{8 \cdot 6}{2}$

$4 \cdot 6 = 24\ cm^2$

6)

r = lado Hex

r = 4 cm

Área

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

$A = \frac{4^2\sqrt{3}}{4}$

$A = 4\sqrt{3}$

Área quadrado

$4\sqrt{3}^2$

$4\sqrt{3} \cdot 4\sqrt{3}$

$16\sqrt{3}$

$16 \cdot 3 = 48$