

TAREFA BÁSICA 20: POLÍGONOS

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Exercício 1:

$$\begin{aligned} \textcircled{1} \quad \hat{\alpha}_1 &= \frac{(12-2) \cdot 180^\circ}{12} & \hat{\alpha}_e &= \frac{360^\circ}{12} \\ \hat{\alpha}_1 &= \frac{10 \cdot 180^\circ}{12} & \hat{\alpha}_e &= 30^\circ \\ \hat{\alpha}_1 &= 150^\circ \\ \hat{\alpha}_1 &= 150^\circ \end{aligned}$$

Exercício 2 e 3:

$$\begin{aligned} \textcircled{2} \quad S_1 &= (20-2) \cdot 180 \\ S_1 &= 3240^\circ \\ \textcircled{3} \quad \hat{\alpha}_1 &= \frac{(n-2) \cdot 180^\circ}{n} \\ \hat{\alpha}_1 &= \frac{180(n-2)}{n} \end{aligned}$$

Exercício 4:

$$\begin{aligned}
 \textcircled{4} \quad \hat{a}_e + \hat{a}_1 &= 180^\circ \\
 \hat{a}_1 &= 5\hat{a}_e \\
 \hat{a}_e + 5\hat{a}_e &= 180^\circ \\
 6\hat{a}_e &= 180^\circ \\
 \hat{a}_e &= 30^\circ \quad \hat{a}_1 = 5 \cdot 30^\circ = 150^\circ \\
 150^\circ &= \frac{180^\circ(n-2)}{n} \\
 150n &= 180n - 360 \\
 30n &= 360 \\
 n &= 12 \rightarrow \text{dodecágono}
 \end{aligned}$$

Exercício 5:

$$\begin{aligned}
 \textcircled{5} \quad d &= \frac{4(4-3)}{2} \\
 d &= \frac{4 \cdot 1}{2} \\
 d &= 2 \quad l = 2 \times 2 = 4 \rightarrow \text{quadrado}
 \end{aligned}$$

Exercício 6:

$$\begin{aligned}
 \textcircled{6} \quad \hat{a}_e + \hat{a}_1 &= 180^\circ \quad \hat{a}_1 = 3 \cdot \hat{a}_e = 135^\circ \\
 \hat{a}_1 &= 3\hat{a}_e \\
 \hat{a}_e + 3\hat{a}_e &= 180^\circ \\
 4\hat{a}_e &= 180^\circ \\
 \hat{a}_e &= 45^\circ \\
 135^\circ &= \frac{180^\circ(n-2)}{n} \\
 135n &= 180n - 360 \\
 45n &= 360 \\
 n &= 360/45 \\
 n &= 8 \rightarrow \text{octógono}
 \end{aligned}$$