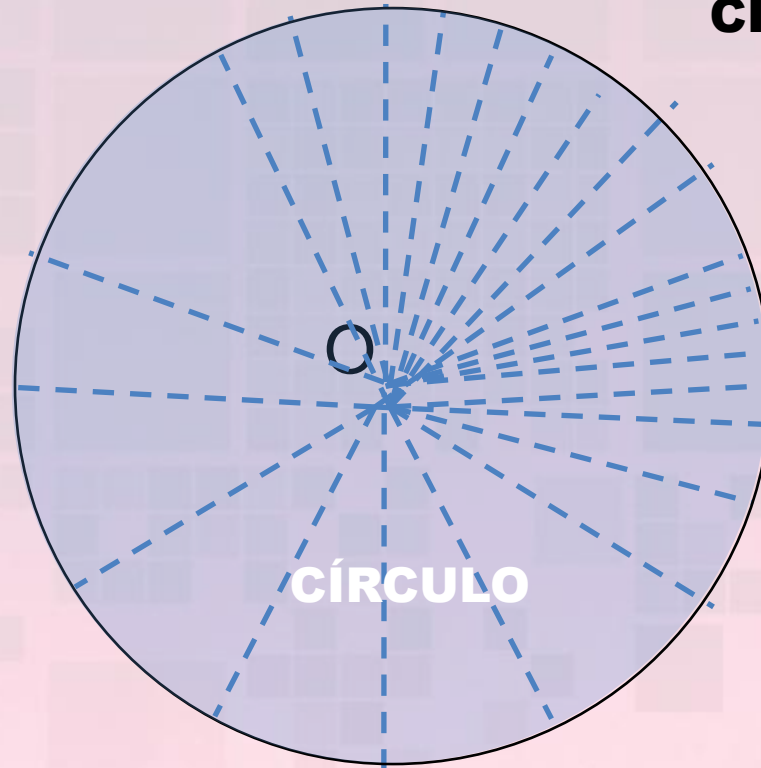


The image features a complex abstract composition. A dark purple background is overlaid with a faint, light-colored grid pattern. Several thick, diagonal lines in shades of yellow, orange, and red cross the frame. A prominent yellow line runs from the bottom left towards the top right. Another yellow line runs from the top left towards the bottom right. A red line runs from the top left towards the bottom right, overlapping the yellow lines. A purple line runs from the top left towards the bottom right, overlapping the red line. The word "MATEMÁTICA" is written in white, bold, uppercase letters, slanted to follow the path of the yellow lines.

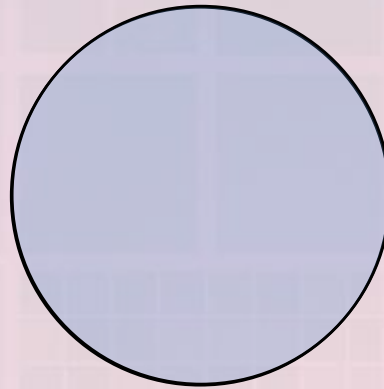
MATEMÁTICA

CIRCUNFERÊNCIA



CIRCUNFERÊNCIA

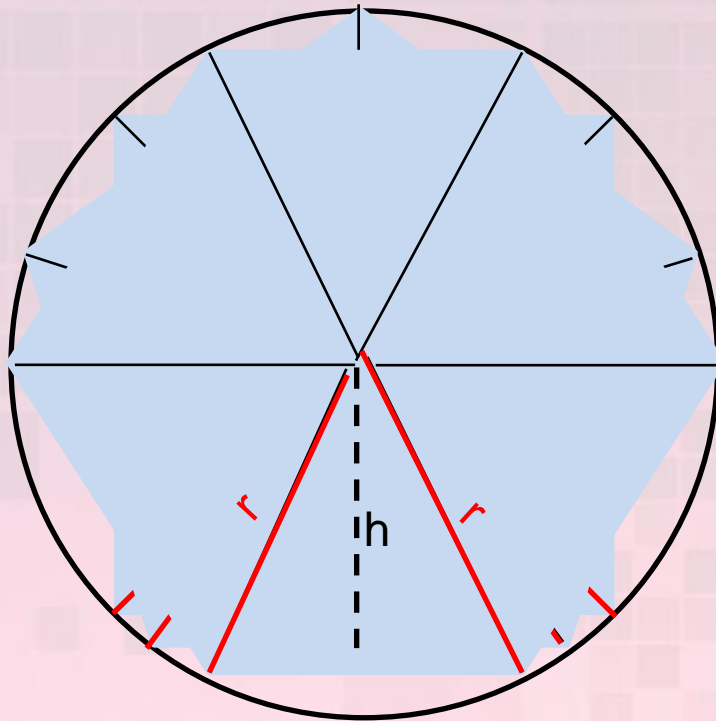
CÍRCULO



CÍRCULO ou CIRCUNFERÊNCIA?

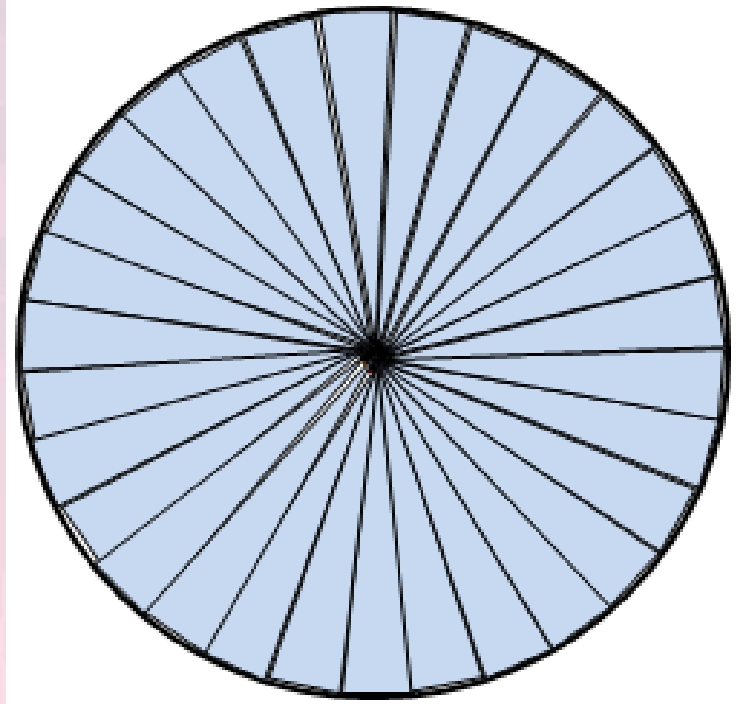


Polígono Regular: polígono cujos vértices pertencem a uma circunferência. Sua área é igual à soma das áreas dos triângulos isósceles, cujos lados são os raios da circunferência.



$$\begin{aligned} \text{Área}_{\text{polígono}} &= 6 \cdot \text{Área}_{\Delta} \\ &= 6 \cdot \frac{b \cdot h}{2} \\ &= 6 \cdot \frac{\ell \cdot h}{2} \end{aligned}$$

Observe o que acontece quando os lados de um polígono regular inscrito aumenta infinitamente!



$$\text{Área} = n \cdot \text{Área}_{\Delta}$$

$$= n \cdot \frac{l \cdot h}{2}$$

$$= n l \cdot \frac{h}{2}$$

Mas $n \cdot l$ é o perímetro do polígono, que equivale ao comprimento da circunferência.

$$= \cancel{2} \pi r \cdot \frac{r}{\cancel{2}}$$

$$n l = 2 \pi r$$

E a altura torna-se equivalente ao raio.

$$h = r$$

$$\text{Área} = \pi r^2$$