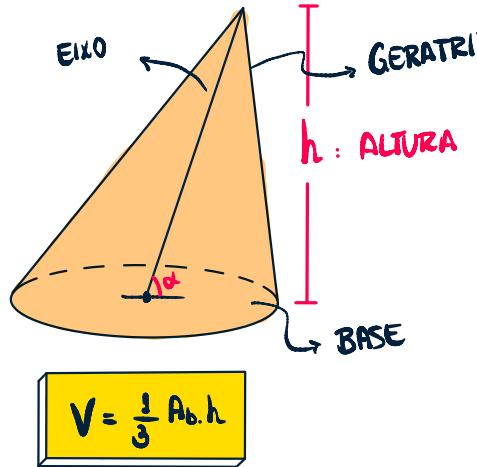
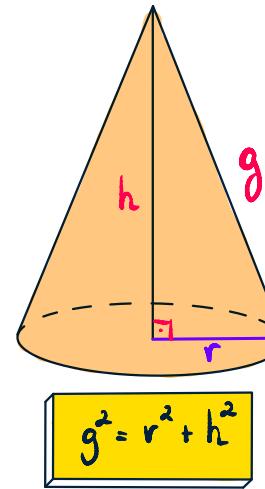


GEOMETRIA ESPACIAL - CONES

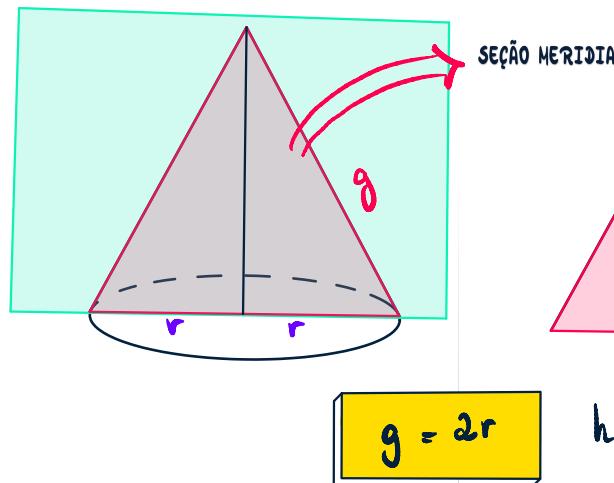
VOLUME



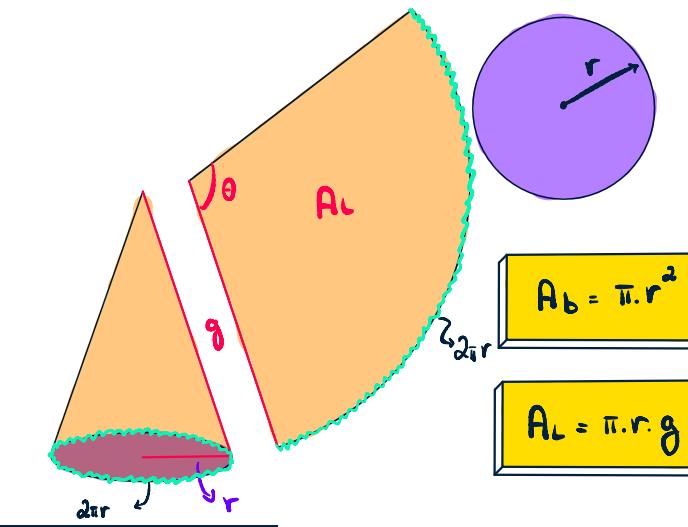
CONE RETO



CONE EQUILÁTERO



PLANIFICAÇÃO



ÂNGULO	COMPRIMENTO
2π	$2\pi g$
θ	$2\pi r$

$$\theta = \frac{2\pi r}{g}$$

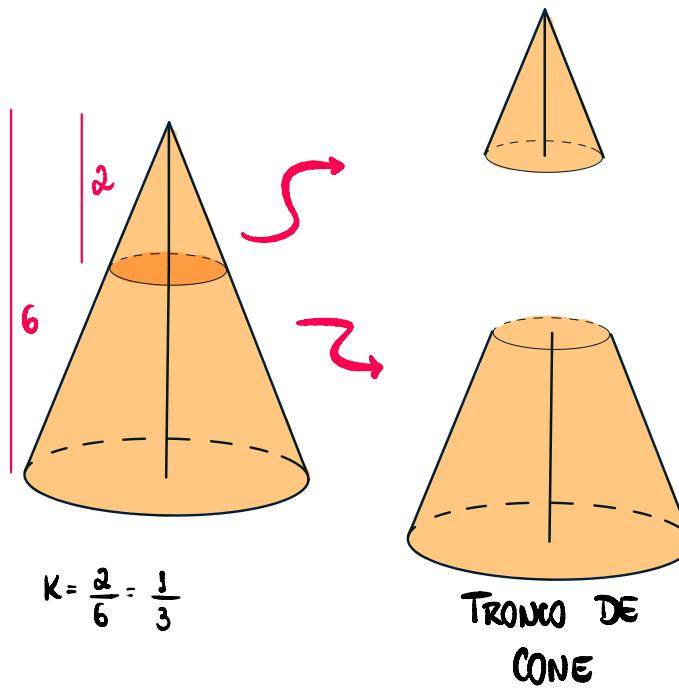
ÂNGULO	ÁREA
2π	πg^2
θ	A_L

$$2A_L = \theta g^2$$

$$A_L = \frac{2\pi r}{g} \cdot g$$

$$A_L = \pi r g$$

TRONCO DE CONE



$$\text{RAIO BASE MENOR: } r = \frac{r}{R} = \frac{r}{3r} = \frac{1}{3}$$

$$\text{RAIO BASE MAIOR: } R = 3r$$

$$A_1$$

$$A_1 = \pi r^2$$

$$A_2 = 9 \cdot A_1$$

$$A_2 = 9 \cdot \pi r^2$$

$$\text{VOLUME CONE PEQUENO: } V_1$$

$$\text{VOLUME CONE GRANDE: } V_2 = 27V_1$$

$$\text{VOLUME TRONCO: } V_T = V_2 - V_1$$

$$V_T = 26V_1$$

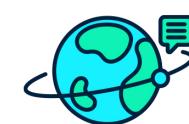
$$\frac{A_1}{A_2} = \frac{K^2}{9}$$

$$\frac{A_1}{A} = \frac{1}{9}$$

$$V_1 = \frac{1}{3} \pi r^2 h$$

$$\frac{V_1}{V_2} = \frac{1}{27} \rightarrow V_2 = 27V_1$$

$$K = \frac{1}{2} ; K^3 = \frac{1}{8}$$



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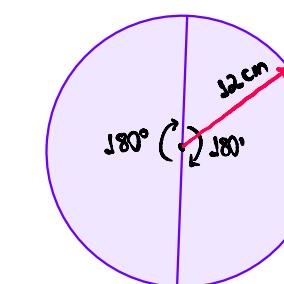
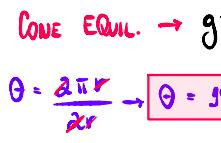
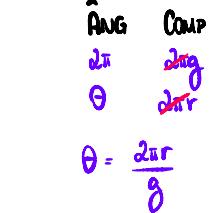
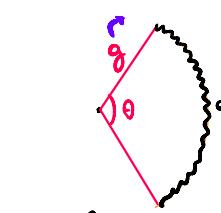
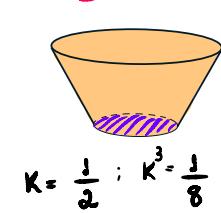
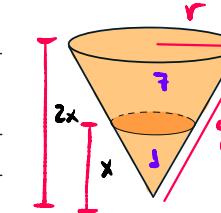
Copos feitos de papelão estão sendo cada vez mais utilizados.

Um fabricante de copos está encarregado de fazer uma entrega para uma festa. Inicialmente, seriam taças no formato de cone equilátero, com uma haste de metal. No entanto, os planos mudaram e o dono da festa optou por utilizar copos no formato tronco de cone. As taças já estavam prontas, e para não perder o que já havia sido feito, ele sugeriu que as taças fossem cortadas à metade de sua altura e a base menor fosse tampada com uma placa metálica.

Para fazer as taças, o fabricante utilizou chapas de papelão no formato circular, com 12cm de raio. Não há perda de material.

Sabendo que o fabricante utilizou um total de 100 chapas de papelão, qual o volume total de líquido, em cm^3 , esses copos juntos serão capazes de comportar?

- a) $630\pi\sqrt{3}$
- b) $1260\pi\sqrt{3}$
- c) $1890\pi\sqrt{3}$
- d) $1920\pi\sqrt{3}$
- e) $2160\pi\sqrt{3}$



200 TACAS

$$g = 12\text{ cm}$$

$$V = \frac{1}{3} \pi r^2 \cdot h$$

$$r = \frac{1}{2} g \rightarrow r = 6$$

$$h = 6\sqrt{3}$$

$$V_{\text{chap}} = \frac{1}{3} \pi \cdot 6 \cdot 6 \cdot 6\sqrt{3} = 72\pi\sqrt{3} \text{ cm}^3$$

$$V_{\text{copo}} = \frac{7}{8} V_{\text{chap}} = \frac{7}{8} \cdot 72\pi\sqrt{3} = 63\pi\sqrt{3} \text{ cm}^3$$

$$V_{\text{TOTAL}} = 200 V_{\text{copo}}$$

$$V_{\text{TOTAL}} = 200 \cdot 63\pi\sqrt{3} \text{ cm}^3$$

$$V_{\text{TOTAL}} = 12600\pi\sqrt{3} \text{ cm}^3$$