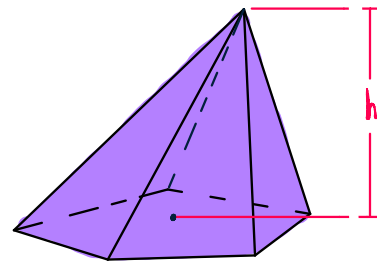


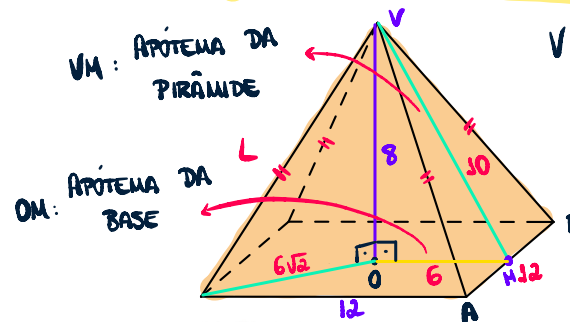
GEOMETRIA ESPACIAL - PIRÂMIDES



ÁREA DA BASE: A_b
 ÁREA LATERAL: A_L
 ÁREA TOTAL: $A_T = A_b + A_L$

$$V = \frac{1}{3} \cdot A_b \cdot h$$

PIRÂMIDE REGULAR

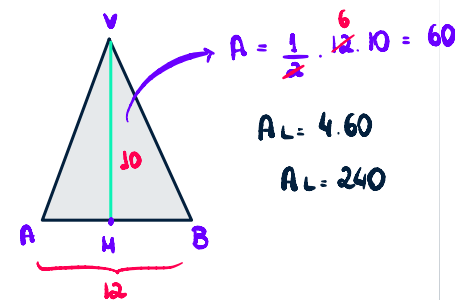


ALTURA: 8
 ARESTA DA BASE: 12
 VOLUME: 384
 ARESTA LATERAL: $2\sqrt{34}$
 ÁREA LATERAL: 240

$$V = \frac{1}{3} A_b \cdot h = \frac{1}{3} \cdot 12^2 \cdot 8 = \frac{1}{3} \cdot 12 \cdot 12 \cdot 8 = 384$$

$$L^2 = 8^2 + (6\sqrt{2})^2 = 64 + 72 = 136$$

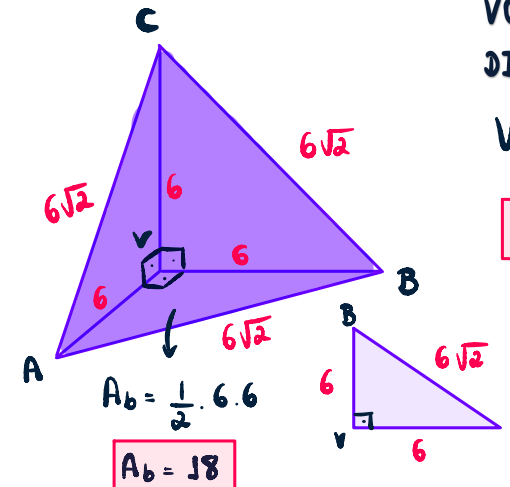
$$L = \sqrt{136} = 2\sqrt{34}$$



$$A_L = 4 \cdot 60$$

$$A_L = 240$$

TETRAEDRO TRI-RETÂNGULO

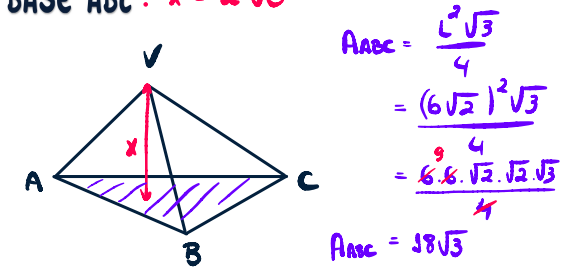


$$\text{VOLUME: } V = 36$$

DISTÂNCIA DE V ATÉ A BASE ABC: $x = 2\sqrt{3}$

$$V = \frac{1}{3} \cdot 18 \cdot 6$$

$$V = 36$$



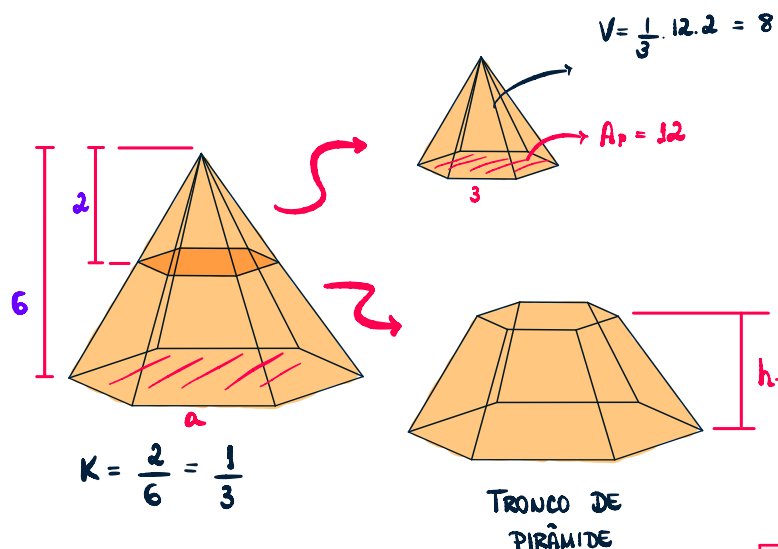
$$A_{abc} = \frac{L^2 \sqrt{3}}{4} = \frac{(6\sqrt{2})^2 \sqrt{3}}{4} = \frac{36 \cdot 2 \cdot \sqrt{3}}{4} = 18\sqrt{3}$$

$$V_{ol} = \frac{1}{3} \cdot A_{abc} \cdot x$$

$$36 = \frac{1}{3} \cdot 18\sqrt{3} \cdot x$$

$$x = \frac{2 \cdot 3 \cdot \sqrt{3}}{\sqrt{3}} = 2\sqrt{3}$$

TRONCO DE PIRÂMIDE



ARESTA BASE MENOR: 3
 ARESTA BASE MAIOR: 12
 VOLUME PIR. PEQ.: 8
 VOLUME TOTAL: 216
 VOLUME TRONCO: 208

$$\frac{3}{12} = K \rightarrow \frac{3}{a} = \frac{1}{3} \rightarrow a = 9$$

$$\frac{12}{Ag} = K^2 \rightarrow \frac{12}{Ag} = \frac{1}{9} \rightarrow Ag = 108$$

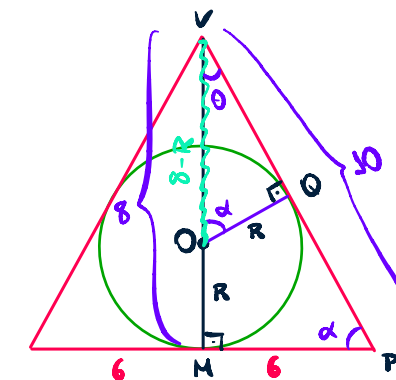
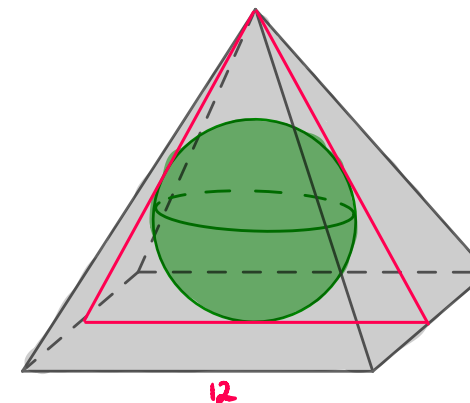
$$\frac{V_P}{V_G} = K^3 \rightarrow \frac{8}{V_G} = \frac{1}{27} \rightarrow V_G = 216$$

$$V_T = \frac{h_T}{3} (A_G + \sqrt{A_G \cdot A_P} + A_P)$$

UNIVERSO NARRADO (2023) #24413

Seja uma pirâmide regular de base quadrada de aresta da base 12 e altura 8. Qual o raio da esfera inscrita à pirâmide?

- a 2
- ~~b 3~~
- c 4
- d 5
- e 6



$$\Delta VOQ \sim \Delta VPM$$

$$\frac{R}{6} = \frac{8-R}{10}$$

$$10R = 48 - 6R$$

$$16R = 48$$

$$R = 3$$



UNIVERSO NARRADO