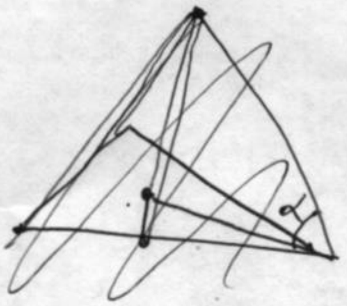
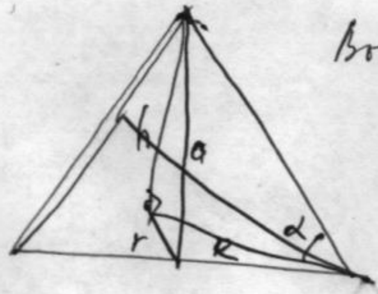




Высота пирамиды — h

a_3 — ст-на прав тр-ка

r — радиус впис окр.

R — радиус опис окр.

В прав. тр-ке

$r = \frac{R}{2} \Rightarrow R = 2r$

$a_3 = 2R\sqrt{3} = 2\sqrt{3} \cdot r = \frac{2\sqrt{3} \cdot a}{\sqrt{1+4tg^2\alpha}}$

по т. Пифагора: $r^2 = a^2 - h^2$

$h = R\,tg\alpha = 2r\,tg\alpha.$

$r^2 = a^2 - 4r^2 tg^2\alpha$

$r^2 = \frac{a^2}{1+4tg^2\alpha} \Rightarrow r = \frac{a}{\sqrt{1+4tg^2\alpha}}$

$a_3 = \frac{2\sqrt{3} \cdot a}{\sqrt{1+4tg^2\alpha}}$

$S_{осн} = \frac{a_3^2\sqrt{3}}{4} = \frac{12a \cdot \sqrt{3}}{(1+4tg^2\alpha) \cdot 4} = \frac{3a\sqrt{3}}{1+4tg^2\alpha}$

$S_{бок} = 3S_\Delta = 3 \cdot \frac{1}{2} \cdot \frac{a_3}{2} \cdot a = \frac{3 \cdot a \cdot 2\sqrt{3}a}{4 \cdot \sqrt{1+4tg^2\alpha}} = \frac{3\sqrt{3}}{2} \cdot \frac{a^2}{\sqrt{1+4tg^2\alpha}}$

$S_{полн} = S_{осн} + S_{бок} = \frac{3a\sqrt{3}}{1+4tg^2\alpha} + \frac{3a\sqrt{3} \cdot a}{2\sqrt{1+4tg^2\alpha}} =$

$= \frac{6a\sqrt{3} + 3a\sqrt{3}a\sqrt{1+4tg^2\alpha}}{2(1+4tg^2\alpha)} = \frac{3a\sqrt{3}}{2(1+4tg^2\alpha)} \cdot (2 + a\sqrt{1+4tg^2\alpha})$ см^2

1 8 8 2

$V_{большого\ цилиндра} = S_{осн} \cdot h_б = \pi R^2 \cdot h_б = \pi \cdot 16 \cdot 8 = 128\pi.$

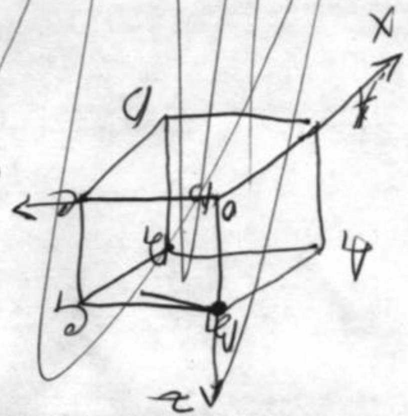
$h_{конуса} = \frac{8-6}{2} = 1$

$V_{конуса} = \frac{1}{3} S_{осн} \cdot h_к = \frac{1}{3}\pi R^2 \cdot h_к = \frac{\pi \cdot 16 \cdot 1}{3} = \frac{16}{3}\pi$

$V_{2-х\ конусов} = 2V_к = \frac{2 \cdot 16}{3}\pi = \frac{32}{3}\pi$

$V_{фигуры} = V_{б.ц.} - V_{2-х\ к.} = 128\pi - \frac{32}{3}\pi = \frac{384-32}{3} = \frac{352}{3}\pi$

Ответ: $V = \frac{352}{3}\pi$ см^3



B (0; 0; 0)

A (6; 0; 0)

C (0; 4; 0)

D (6; 4; 0)

A1 (6; 0; 4) C1 (0; 4; 4)

B1 (0; 0; 4) D1 (6; 4; 4)

~~AB = 6~~

пусть AO = 6 = x

OC = 4 = y

OB = 4 = z