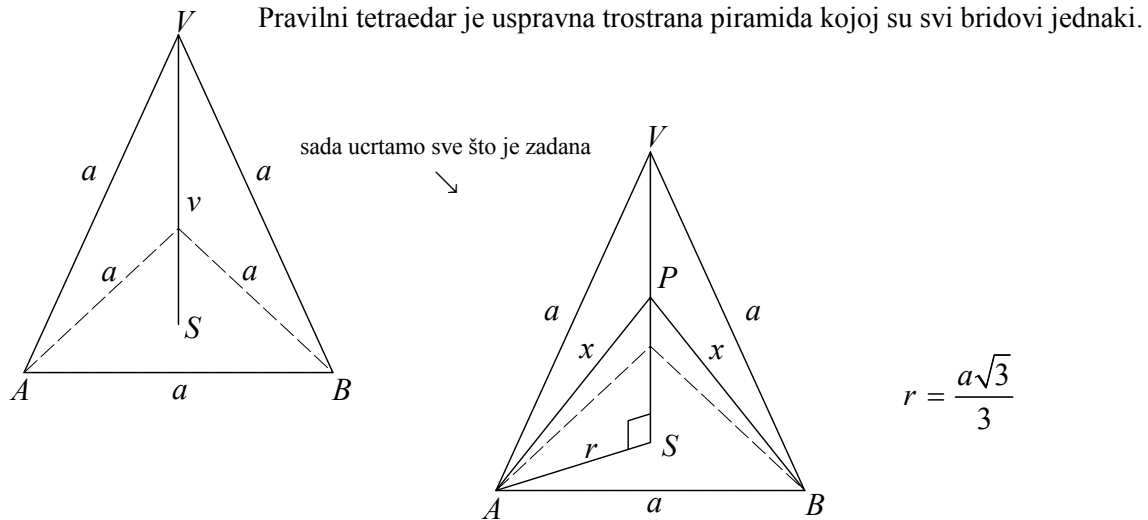


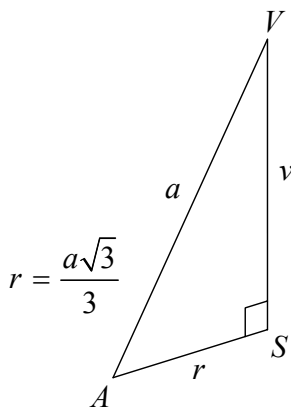
M-17 Polovište visine pravilnog tetraedra spojeno je s dva vrha osnovke. Kut između tih spojnica iznosi

- A.  $\frac{3\pi}{4}$       B.  $\frac{2\pi}{3}$       C.  $\frac{\pi}{2}$       D.  $\frac{\pi}{3}$       E.  $\frac{\pi}{4}$

Nacrtajmo skicu:



1. izdvojimo pravokutan trokut ASV



$$v^2 = a^2 - r^2$$

$$v^2 = a^2 - \left(\frac{a\sqrt{3}}{3}\right)^2$$

$$v^2 = a^2 - \frac{a^2 \sqrt{3}^2}{9}$$

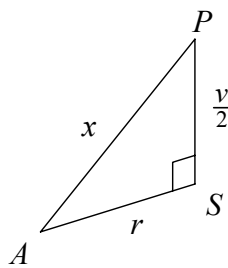
$$v^2 = a^2 - \frac{3 \cdot a^2}{9}$$

$$v^2 = \frac{9a^2 - 3a^2}{9}$$

$$v^2 = \frac{6a^2}{9} \quad / \sqrt{\quad}$$

$$v = \frac{a\sqrt{6}}{3}$$

2. izdvojimo pravokutan trokut ASP



$$x^2 = r^2 + \left(\frac{v}{2}\right)^2$$

$$x^2 = \left(\frac{a\sqrt{3}}{3}\right)^2 + \left(\frac{\frac{a\sqrt{6}}{3}}{2}\right)^2$$

$$x^2 = \frac{a^2 \cdot \sqrt{3}^2}{3^2} + \left(\frac{a\sqrt{6}}{6}\right)^2$$

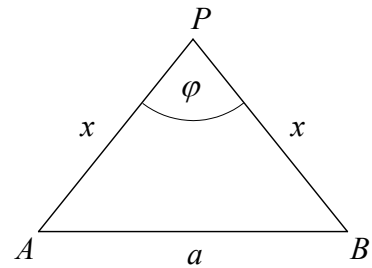
$$x^2 = \frac{3a^2}{9} + \frac{a^2 \cdot \sqrt{6}^2}{6^2}$$

$$x^2 = \frac{a^2}{3} + \frac{6a^2}{36}$$

$$x^2 = \frac{a^2}{3} + \frac{a^2}{6} = \frac{2a^2 + a^2}{6} = \frac{3a^2}{6}$$

$$x^2 = \frac{a^2}{2}$$

3. izdvojimo trokut APB



po kosinusu teoremu:

$$a^2 = x^2 + x^2 - 2 \cdot x \cdot x \cdot \cos \varphi$$

$$a^2 = 2 \cdot x^2 - 2x^2 \cdot \cos \varphi$$

$$a^2 = 2 \cdot \frac{a^2}{2} - 2 \cdot \frac{a^2}{2} \cdot \cos \varphi$$

$$a^2 = a^2 - a^2 \cdot \cos \varphi$$

$$a^2 - a^2 = -a^2 \cdot \cos \varphi$$

$$0 = -a^2 \cdot \cos \varphi$$

$$a^2 \cdot \cos \varphi = 0 \quad / : a^2$$

$$\cos \varphi = 0 \quad / \cos^{-1}$$

$$\varphi = 90^\circ$$

$$\varphi = \frac{\pi}{2}$$