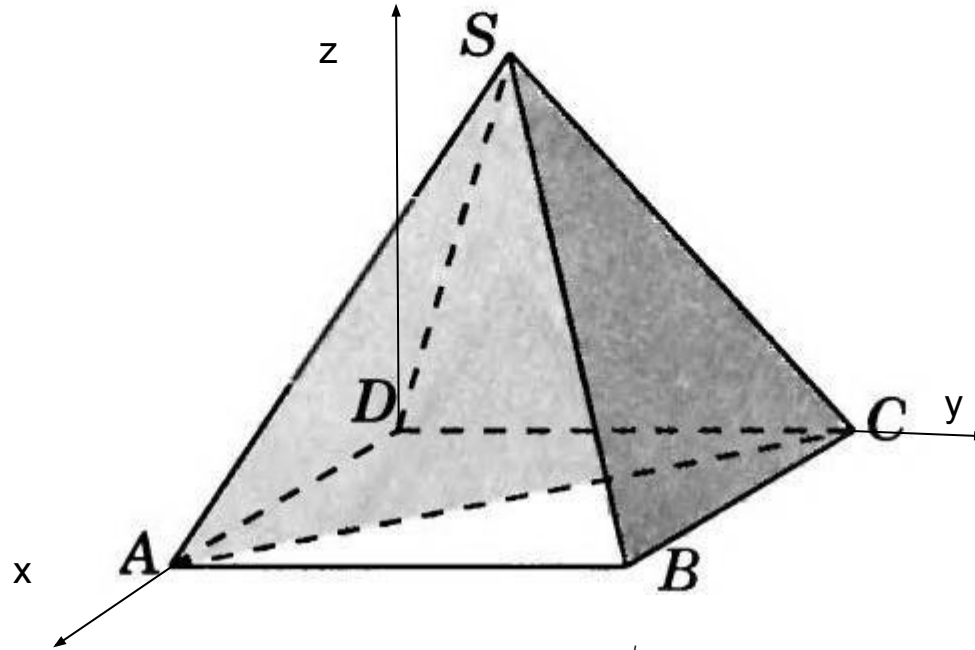


В правильной четырехугольной пирамиде $SABCD$, все ребра которой равны 1, найдите косинус угла между плоскостями SAC и SBC .



$$A(1;0;0) \quad B(1;1;0)$$

$$S\left(\frac{1}{2}; \frac{1}{2}; \frac{\sqrt{2}}{2}\right)$$

$$C(0;1;0)$$

$$AS\{-\frac{1}{2}; \frac{1}{2}; \frac{\sqrt{2}}{2}\}$$

$$CS\{\frac{1}{2}; -\frac{1}{2}; \frac{\sqrt{2}}{2}\}$$

$$BS\{-\frac{1}{2}; -\frac{1}{2}; \frac{\sqrt{2}}{2}\}$$

$$CS\{\frac{1}{2}; -\frac{1}{2}; \frac{\sqrt{2}}{2}\}$$

$$n1\{x;y;z\}$$

$$n2\{a;b;c\}$$

$$-\frac{1}{2}a - \frac{1}{2}b + \frac{\sqrt{2}}{2}c = 0 \quad | \cdot 2$$

$$\frac{1}{2}a - \frac{1}{2}b + \frac{\sqrt{2}}{2}c = 0 \quad | \cdot 2$$

$$c = 1$$

$$-a - b + \sqrt{2} = 0$$

$$a - b + \sqrt{2} = 0$$

$$-2b + 2\sqrt{2} = 0$$

$$b = \sqrt{2}$$

$$-a - \sqrt{2} + \sqrt{2} = 0$$

$$a = 0$$

$$n2\{0; \sqrt{2}; 1\}$$

$$-\frac{1}{2}x + \frac{1}{2}y + \frac{\sqrt{2}}{2}z = 0 \quad | \cdot 2$$

$$\frac{1}{2}x - \frac{1}{2}y + \frac{\sqrt{2}}{2}z = 0 \quad | \cdot 2$$

$$-x + y + \sqrt{2} = 0 \quad | \cdot (-1)$$

$$x - y + \sqrt{2} = 0$$

$$z = 0$$

$$x - y - \sqrt{2} = 0$$

$$x - y + \sqrt{2} = 0$$

$$z = 1$$

$$2x - 2y = 0$$

$$x = y = 1$$

$$n1\{1;1;0\}$$

$$\cos(n1;n2) = \frac{\sqrt{2}}{\sqrt{2} \cdot \sqrt{3}} = \frac{\sqrt{3}}{3}$$