



9, 18, 36, 72 - sin, cos

правильный 10-и угольник
to be continued...

$ABC \sim DBC$ (по 2-ум углам)

$$BD/AC = BC/AB = DC/BC$$

$$AD = DB = BC = x$$

$$x/1 = x/1 = DC/x = (1-x)/x$$

$$x = (1-x)/x$$

$$x^2 = 1 - x$$

$$x^2 + x - 1 = 0$$

$$D = 1 + 4 = 5$$

$$x = (-1 + \sqrt{5})/2 \quad x = (-1 - \sqrt{5})/2 - \text{не подходит}$$

в тр АНС

$$\sin A/2 = \sin 18 = CH/AC = CH/1 = CH = x/2 = (\sqrt{5}-1)/4 = \cos 72$$

$$\sin^2 + \cos^2 = 1$$

$$\cos = \sqrt{1 - ((\sqrt{5}-1)/4)^2} =$$

$$= \sqrt{1 - (6-2\sqrt{5})/16} = \sqrt{1 - (3-\sqrt{5})/8} =$$

$$= \sqrt{(8-3+\sqrt{5})/8} = \sqrt{(5+\sqrt{5})/8}$$