正n面体の1/n角錐分割の展開図

'13. 1

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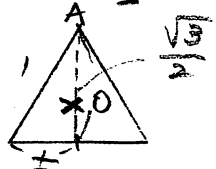
正n面体 (正m角形)	体積 V_n 辺1とする	V_n/n	角錐壁の形 [底面] (角錐頂点垂線の長さ)
正四面体 (3)	$\frac{\sqrt{2}}{12}$ 0.11785113	$\frac{\sqrt{2}}{48}$	$\frac{\sqrt{6}}{4}$=0.6124, $\frac{\sqrt{2}}{4}$ 0.3536, [35.26°], ($\frac{\sqrt{6}}{24}$=0.1021)
正六面体 立方体 さいころ (4)	1	$\frac{1}{6}$	$\frac{\sqrt{3}}{2}$=0.866, $\frac{\sqrt{2}}{2}$=0.707, [54.736°] ($\frac{1}{2}$)
正八面体 (3)	$\frac{\sqrt{2}}{3}$ 0.471404052	$\frac{\sqrt{2}}{24}$	$\frac{\sqrt{2}}{2}$=0.707, $\frac{1}{2}$, [45°] ($\frac{\sqrt{6}}{6}$=0.408)
正十二面体 (5)	$\frac{15+7\sqrt{5}}{4}$ 7.663118961	$\frac{15+7\sqrt{5}}{48}$	$\frac{\sqrt{3}+\sqrt{15}}{4}$=1.401, [69.09°], $\frac{3+\sqrt{5}}{4}$=1.309, ($\frac{\sqrt{50+10\sqrt{5}}}{20}$ 0.425)
正二十面体 (3)	$\frac{5}{12}(3+\sqrt{5})$ 2.181694991	$\frac{3+\sqrt{5}}{48}$ 0.10908	$\frac{\sqrt{10+2\sqrt{5}}}{4}$=0.951, $\frac{\sqrt{5}+1}{4}$=0.809, [58.28°], ($\frac{7+3\sqrt{5}}{24}$ 0.571)

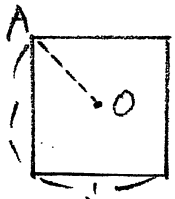
[面積]



正三角形

$S_3=\frac{\sqrt{3}}{4}$

$OA=\frac{\sqrt{3}}{3}$



正方形

$S_4=1$

$OA=\frac{\sqrt{2}}{2}$

$S_5=5\times\left(\frac{1}{2}\times\varphi^2\sin 72^\circ\right)$

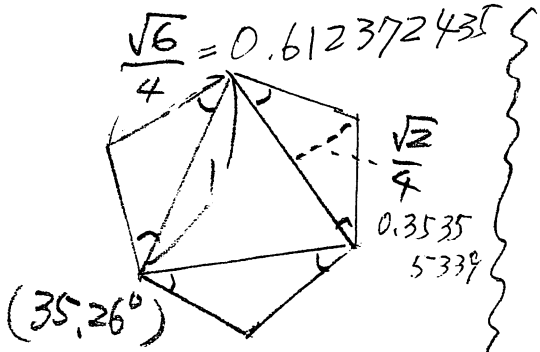
$S_5=\frac{1}{2}\sin 36^\circ(\varphi^2+2\varphi)$

(AC=$\varphi=\frac{1+\sqrt{5}}{2}$ 黄金比)

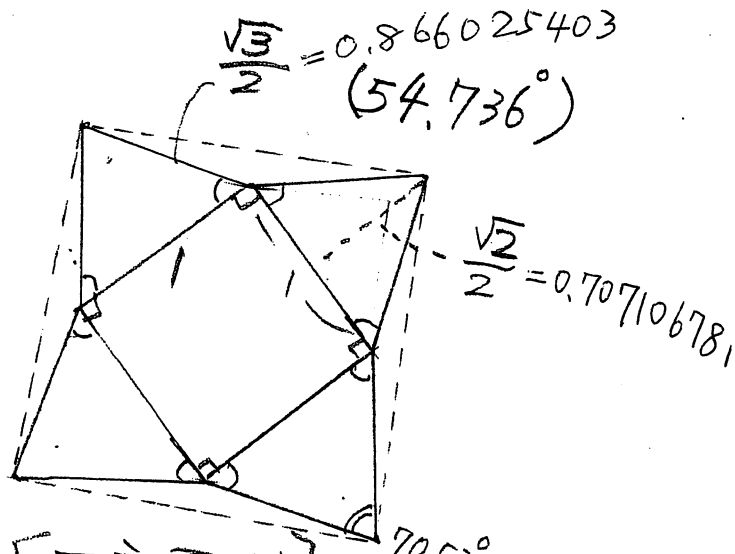
正五角形

$S_5=\frac{\sqrt{25+10\sqrt{5}}}{4}$

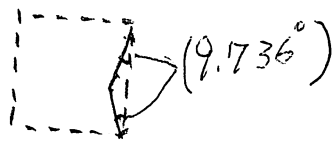
$OA=\sqrt{\frac{5+\sqrt{5}}{10}}$

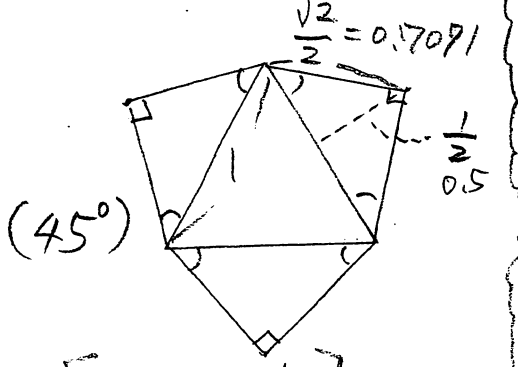


[正四面体]

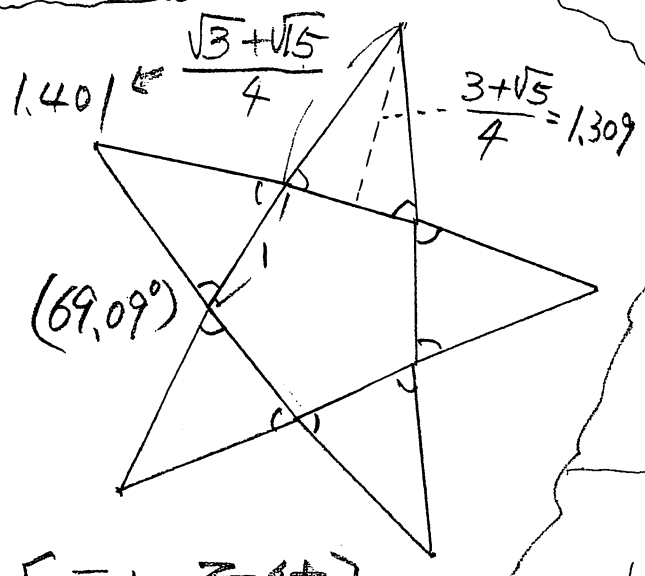


[正六面体]





[正八面体]



[正二十面体]

[正十二面体]

点線は
正三角形

$\frac{\sqrt{20}}{20\sqrt{4}} = 0.92561$

逆数 1.080363