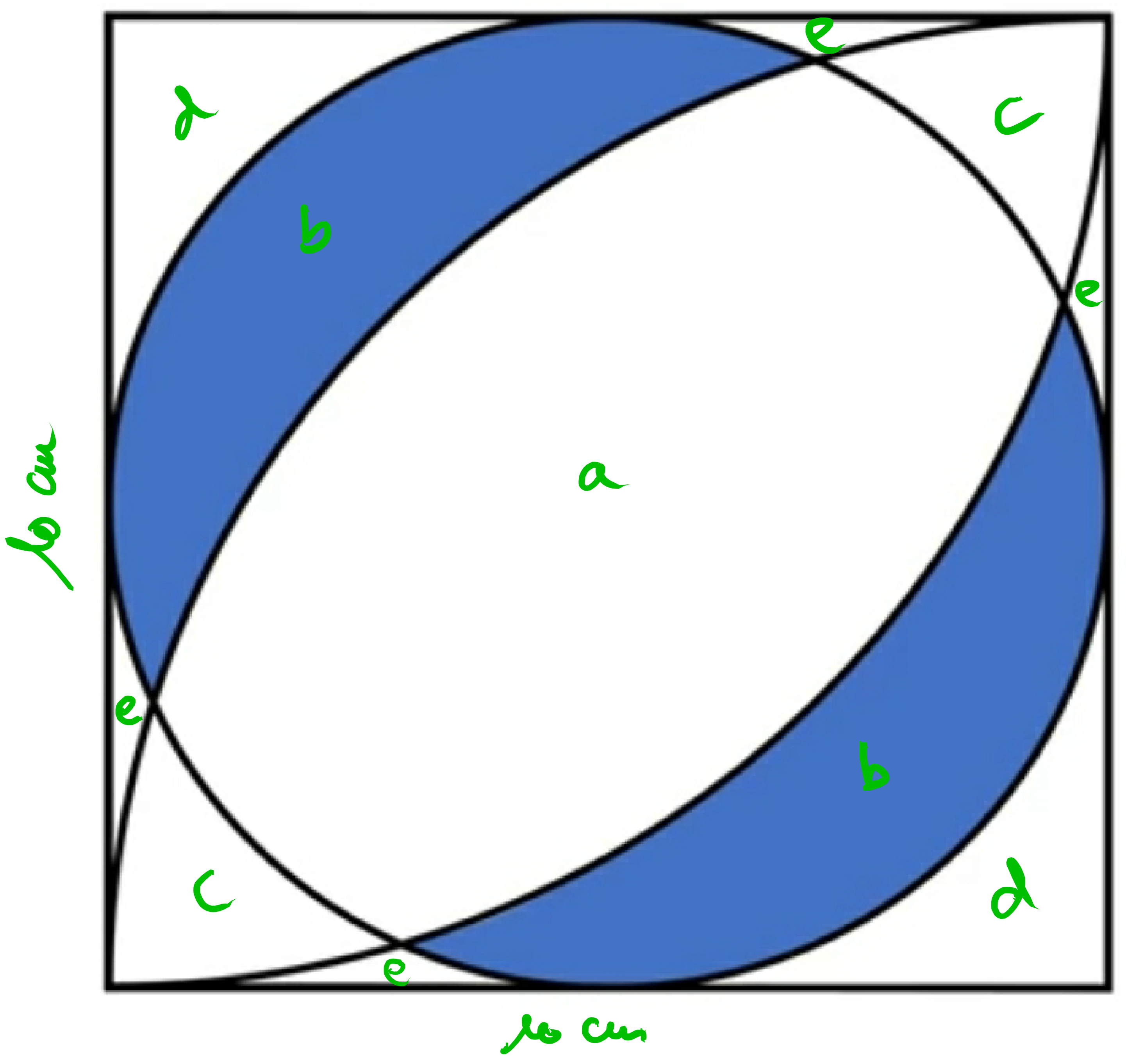


$$\square = a + 2b + 2c + 2d + 4e = 100$$

$$\bigcirc = a + 2b = 25\pi$$

$$= a + b + 2c + d + 2e = \frac{1}{4} 10^2 \pi = 25\pi$$

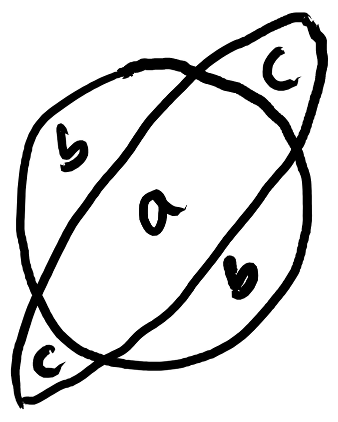
$$4d = \square - \bigcirc = 100 - 25\pi$$

$$\Rightarrow d = 25 - \frac{25}{4}\pi = 25\left(1 - \frac{\pi}{4}\right)$$

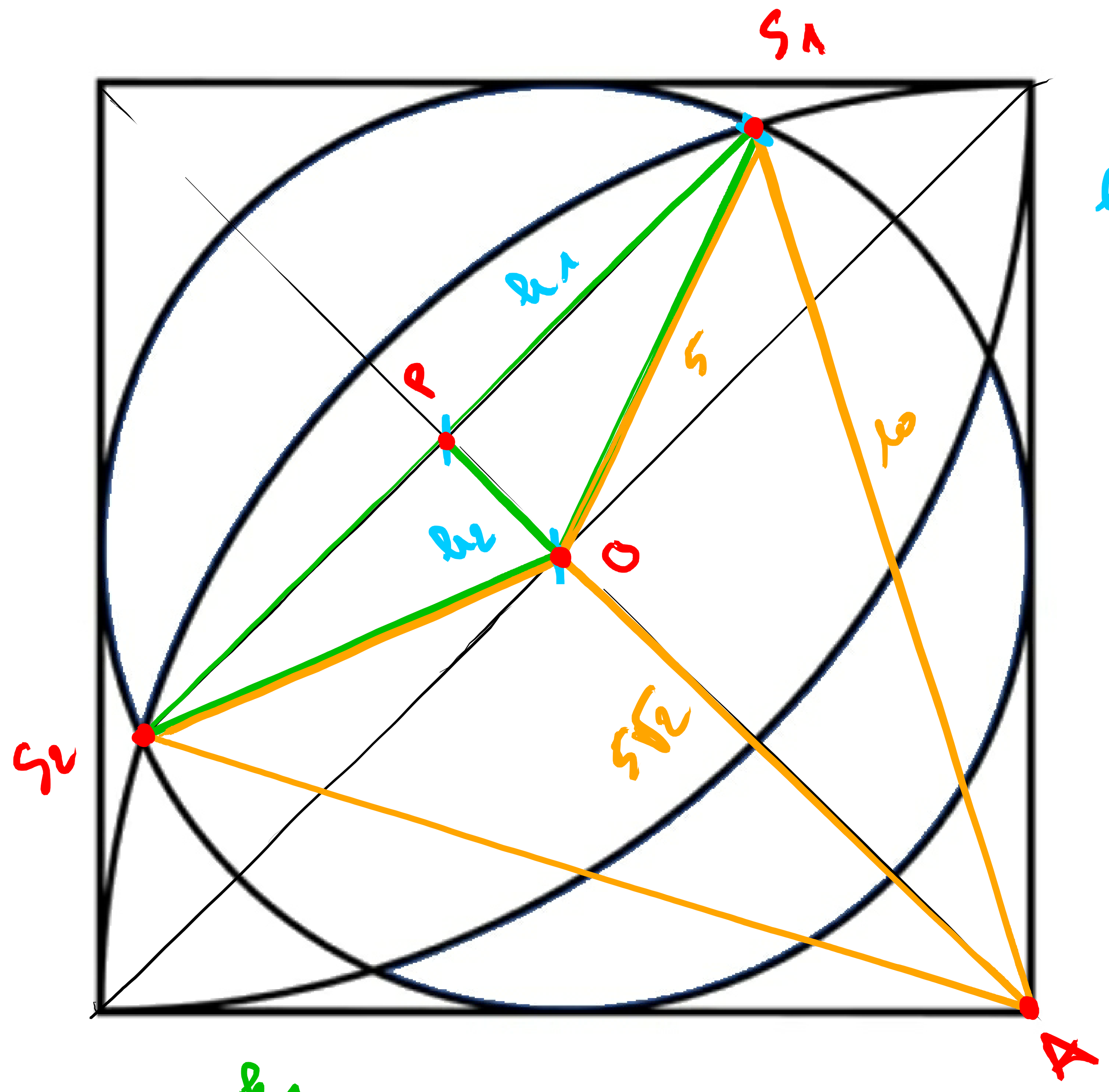
$$d = c + 2e$$

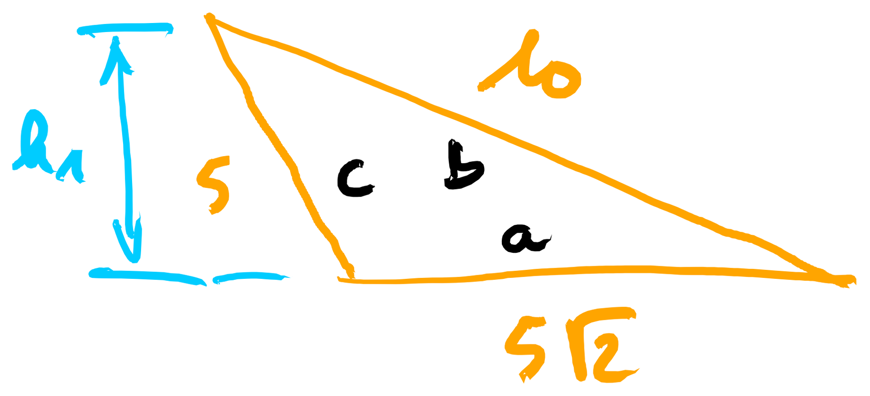
$$\frac{1}{2}(a + 2c) = \;\; - \triangle = \;\; = 25\pi - 50$$

$$\Rightarrow a + 2c = 50\pi - 100 = 50(\pi - 2)$$



$$\begin{cases} a + 2b = 25\pi \\ a + 2c = 50\pi - 100 \end{cases}$$





$$A = \frac{1}{2} b \cdot h$$

$$\Rightarrow h = 2A \cdot \frac{1}{b}$$

Heron's formula:

$$s = a + b + c = 15 + 5\sqrt{2}$$

$$A = \sqrt{\frac{s}{2}\left(\frac{s}{2} - a\right)\left(\frac{s}{2} - b\right)\left(\frac{s}{2} - c\right)}$$

$$\frac{s}{2} = \frac{15 + 5\sqrt{2}}{2}$$

$$(a+b)(a-b) = a^2 - b^2$$

$$A = \frac{1}{4} \cdot \sqrt{\cdots}$$

$$\frac{s}{2} - a = \frac{15 + 5\sqrt{5}}{2} - 5\sqrt{2} = \frac{15 - 5\sqrt{2}}{2}$$

$$\frac{s}{2} - b = \frac{15 + 5\sqrt{2}}{2} - 10 = \frac{5\sqrt{2} - 5}{2}$$

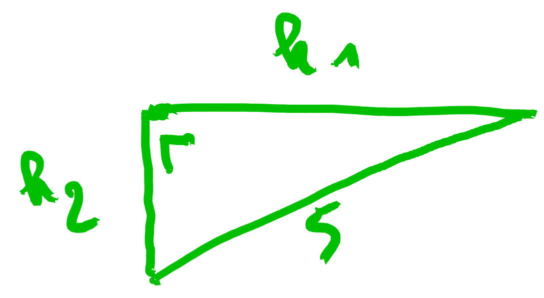
$$\frac{s}{2} - c = \frac{15 + 5\sqrt{2}}{2} - 5 = \frac{5\sqrt{2} + 5}{2}$$

$$A = \frac{1}{4}\sqrt{(225 - 50)(50 - 25)}$$

$$A = \frac{1}{4}\sqrt{\underbrace{175}_{7 \cdot 25} \cdot 25} = \frac{1}{4}\sqrt{7 \cdot 25^2}$$

$$\boxed{A = \frac{25}{4} \cdot \sqrt{7}}$$

$$\boxed{h_1 = \cancel{2}\,\frac{\overset{5}{\cancel{25}}}{\underset{2}{\cancel{4}}} \cdot \sqrt{7}\,\frac{1}{\cancel{5}\sqrt{2}} = \frac{5}{2} \cdot \frac{\sqrt{7}}{\sqrt{2}}}$$



$$h_2 = \sqrt{5^2 - h_1^2}$$

$$h_2 = \sqrt{25 - \left(\frac{5}{2}\frac{\sqrt{7}}{\sqrt{2}}\right)^2}$$

$$= \sqrt{25 - \frac{25}{8} \cdot 7}$$

$$= \sqrt{\frac{8 \cdot 25 - 7 \cdot 25}{8}}$$

$$\boxed{h_2 = \frac{5}{2\sqrt{2}}}$$

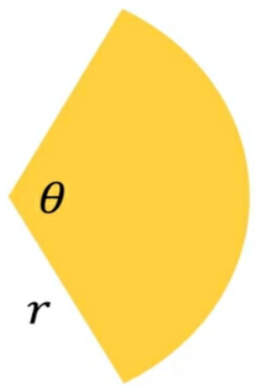
$$A = \frac{1}{2} h_1 \cdot h_2 = \frac{1}{2}\,\frac{5}{2}\,\frac{\sqrt{7}}{\sqrt{2}} \cdot \frac{5}{2\sqrt{2}}$$

$$\boxed{A = \frac{25}{16}\sqrt{7}}$$

$$\Rightarrow A_{\Delta AS_1S_2} = 2\left(\frac{25}{4}\sqrt{7} + \frac{25}{16}\sqrt{7}\right) = 25\sqrt{7}\left(\frac{2}{4} + \frac{2}{16}\right) = 25\sqrt{7}\left(\frac{8+2}{16}\right)$$

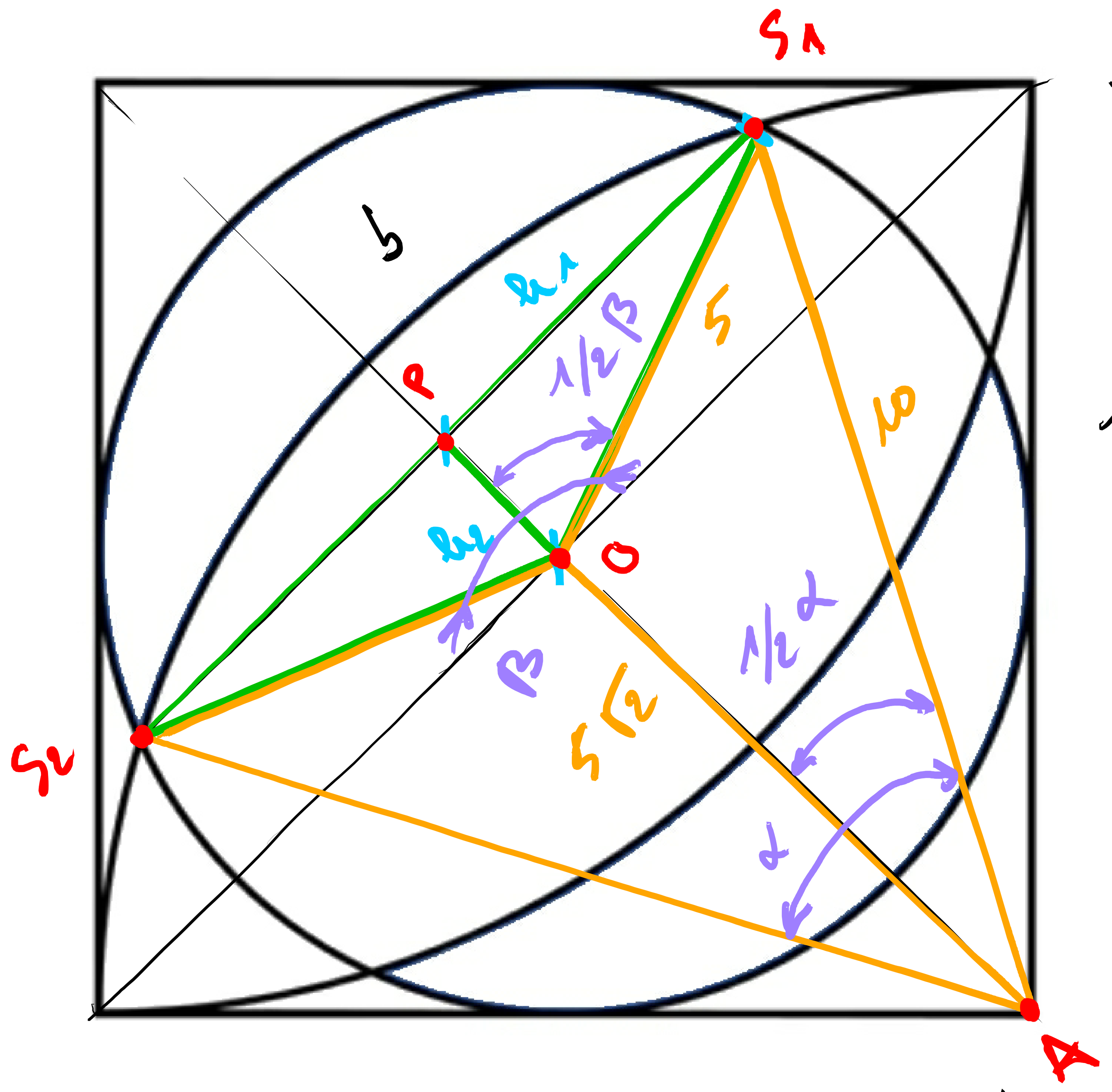
$$= \frac{125}{8}\sqrt{7}$$

$$\Rightarrow A_{\Delta OS_1S_2} = 2 \cdot \frac{25}{16}\sqrt{7} = \frac{25}{8}\sqrt{7}$$



$\frac{1}{2}r^2\theta$

$\frac{1}{2}r^2 \sin\theta$



$$\sin\left(\tfrac{1}{2}\alpha\right) = \frac{h_1}{10} = \frac{\cancel{5}}{2}\frac{\sqrt{7}}{\sqrt{2}}\cdot\frac{1}{\cancel{10}_{2}} = \frac{\sqrt{7}}{4\sqrt{2}}$$

$$\Rightarrow \tfrac{1}{2}\alpha = \operatorname{Asin}\left(\frac{\sqrt{7}}{4\sqrt{2}}\right) \rightarrow \alpha = 2\cdot\operatorname{Asin}\left(\frac{\sqrt{7}}{4\sqrt{2}}\right)$$

$$\sin\left(\tfrac{1}{2}\beta\right) = \frac{h_1}{5} = \frac{5}{2}\frac{\sqrt{7}}{\sqrt{2}}\frac{1}{5} = \frac{\sqrt{7}}{2\sqrt{2}}$$

$$\Rightarrow \beta = 2\operatorname{Asin}\left(\frac{\sqrt{7}}{2\sqrt{2}}\right)$$

$$b = \frown_5 - \frown_{10} = \left(\sphericalangle_5 - \triangle_5\right) - \left(\sphericalangle_{10} - \triangle_{10}\right)$$

$$= \left(\tfrac{1}{2}5^2\cdot\beta - \frac{25}{8}\cdot\sqrt{7}\right) - \left(\tfrac{1}{2}10^2\alpha - \frac{125}{8}\sqrt{7}\right)$$

$$= \left(25\cdot\operatorname{Asin}\left(\frac{\sqrt{7}}{2\sqrt{2}}\right) - \frac{25}{8}\sqrt{7}\right) - \left(100\operatorname{Asin}\left(\frac{\sqrt{7}}{4\sqrt{2}}\right) - \frac{125}{8}\sqrt{7}\right)$$

$$= 25\left(\operatorname{Asin}\left(\frac{\sqrt{7}}{2\sqrt{2}}\right) - 4\operatorname{Asin}\left(\frac{\sqrt{7}}{4\sqrt{2}}\right)\right) - \frac{25}{2}\sqrt{7}$$

$$b = 25\left(\operatorname{Asin}\left(\frac{\sqrt{7}}{2\sqrt{2}}\right) - 4\operatorname{Asin}\left(\frac{\sqrt{7}}{4\sqrt{2}}\right) - \frac{\sqrt{7}}{2}\right) \Leftarrow$$

$$b \approx 14{,}638\ cm^2 \rightarrow \boxed{2b \approx 29{,}276\ cm^2}$$

Maxima CAS