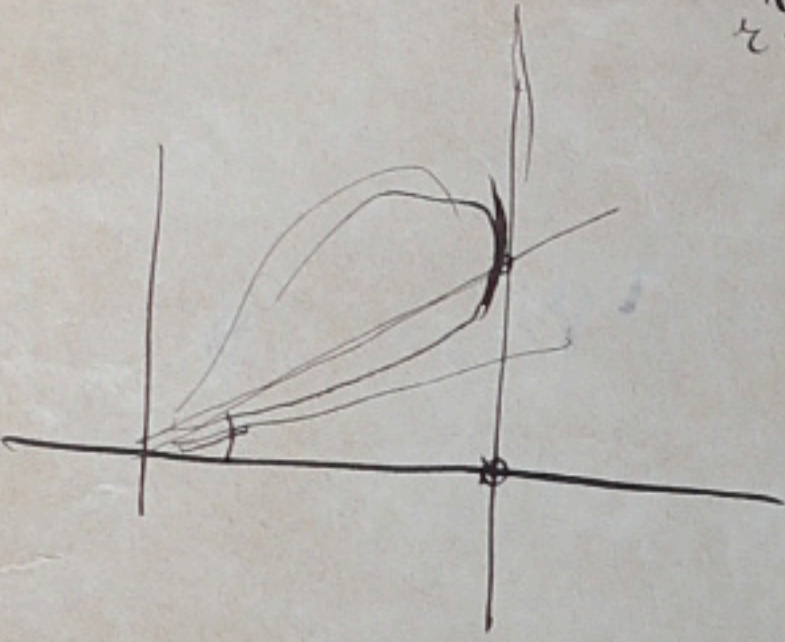


$$\theta = \frac{\pi}{4}$$

$$r = \sqrt{z(a-z)}$$

$$r = hz \frac{a-z}{a}$$

$$h\omega = 1 - 2\alpha$$



$y^2 z^2$

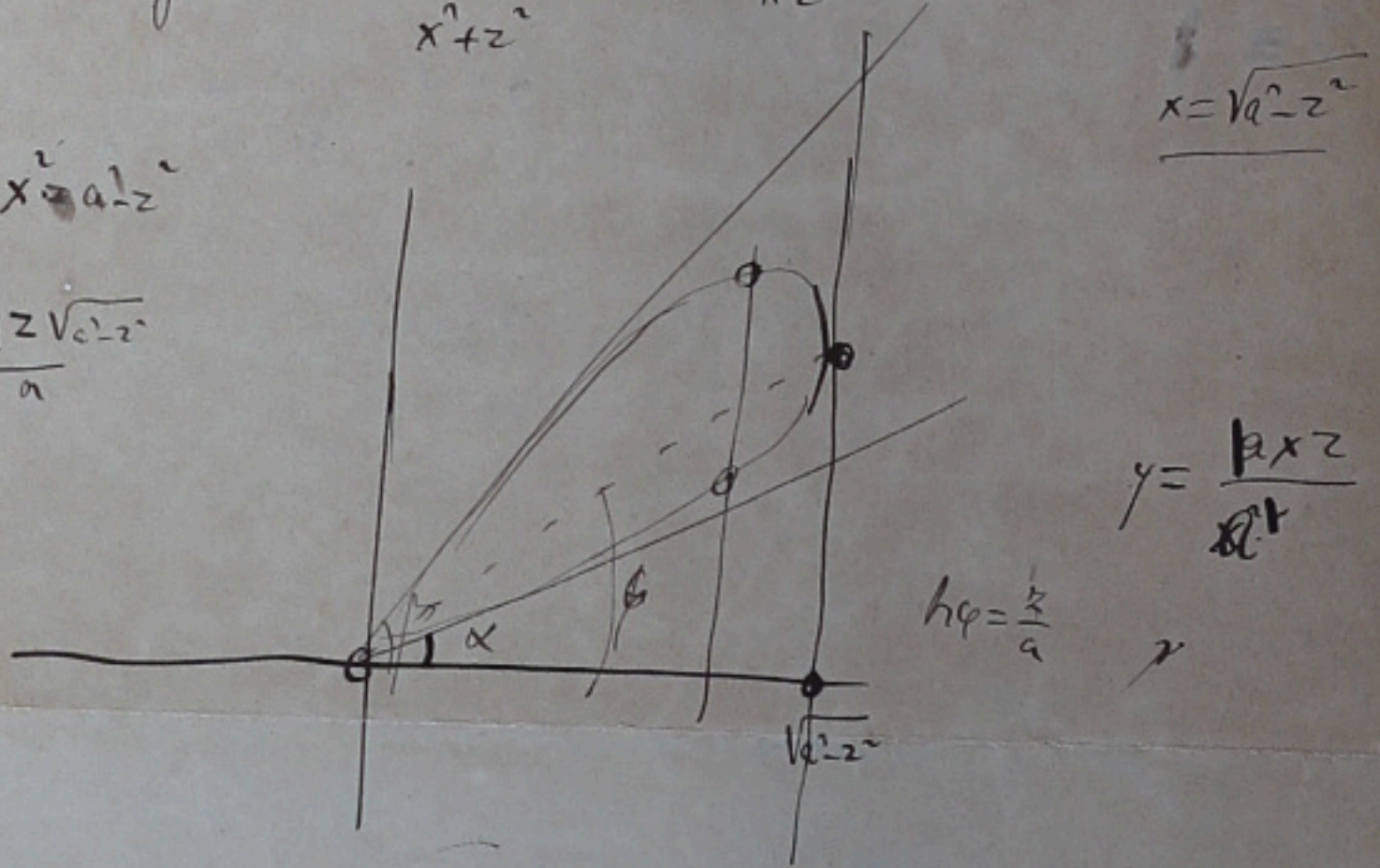
$$y^2(x+z) - 2axyz + xz^2 = 0$$

$$y = \frac{ax \pm \sqrt{a^2 - x^2 - z^2}}{x+z} xz$$

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$$x^2 = a^2 - z^2$$

$$y = \frac{a \pm z\sqrt{a^2 - z^2}}{a}$$



$$\sigma(z) = 4z \int_{\alpha}^{\beta} \frac{a \sin 2\theta - z}{\sin^2 2\theta} d\theta$$

$$V = 2 \int_0^a \sigma(z) dz$$

$$y = \frac{x}{z} (a \pm \sqrt{a^2 - z^2})$$

$$\sigma(z) = 4z \left(\frac{a}{z} \int_{\alpha}^{\beta} \frac{d\theta}{\sin 2\theta} - \int_{\alpha}^{\beta} \frac{d\theta}{\sin^2 2\theta} \right)$$

$$h\alpha = \frac{a - \sqrt{a^2 - z^2}}{z}$$

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$$2z \left(\frac{a}{z} \log \tan \theta + \frac{z}{z} \cot 2\theta \right)$$

$$\frac{1}{z^2} \cot 2\theta = \frac{z}{\sqrt{a^2 - z^2}}$$

$$h\beta = \frac{a + \sqrt{a^2 - z^2}}{z}$$

$$h\alpha + h\beta = 2 \frac{a}{z}$$

$$h\alpha h\beta = 1$$

$$\frac{a}{z} \frac{1}{h\alpha h\beta}$$

$$2a$$

$$2\alpha = 2z \frac{a - \sqrt{a^2 - z^2}}{a - \sqrt{a^2 - z^2}}$$

$$\sigma(z) = 2az \log \frac{h\beta}{h\alpha} + z^2 (\cot 2\beta - \cot 2\alpha)$$

$$= 2az \log \frac{a + \sqrt{a^2 - z^2}}{a - \sqrt{a^2 - z^2}} + z^2 \left(\frac{z}{\sqrt{a^2 - z^2}} - \frac{z}{\sqrt{a^2 - z^2}} \right)$$

$$2\beta = \frac{\pi}{2} - 2\alpha$$

$$= 2az \log \frac{a + \sqrt{a^2 - z^2}}{a - \sqrt{a^2 - z^2}} - 2z\sqrt{a^2 - z^2}$$

$$V = 4a \int_0^a \log \frac{a + \sqrt{a^2 - z^2}}{a - \sqrt{a^2 - z^2}} \cdot z dz - 4 \int_0^a \sqrt{a^2 - z^2} \cdot z dz$$