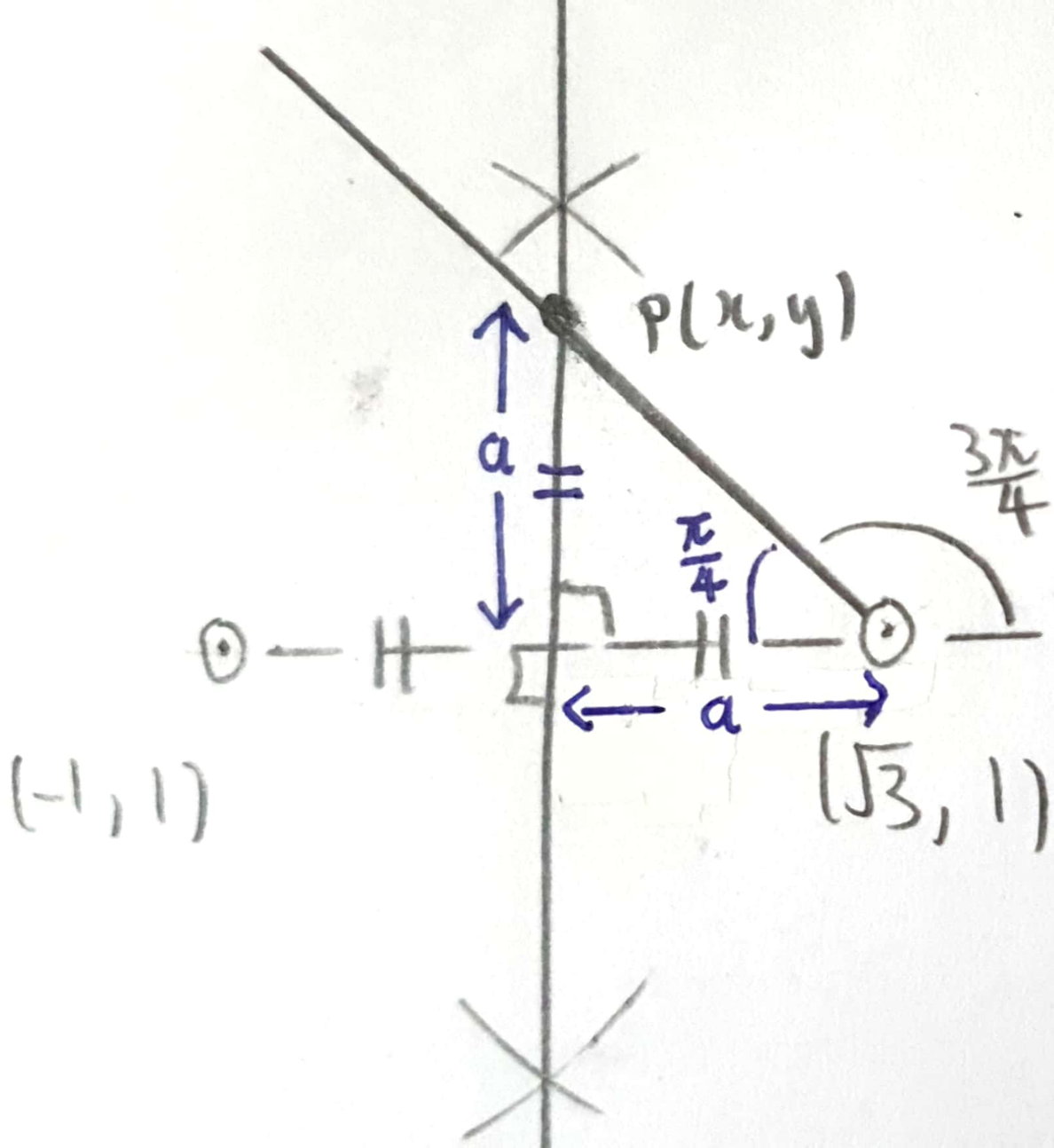


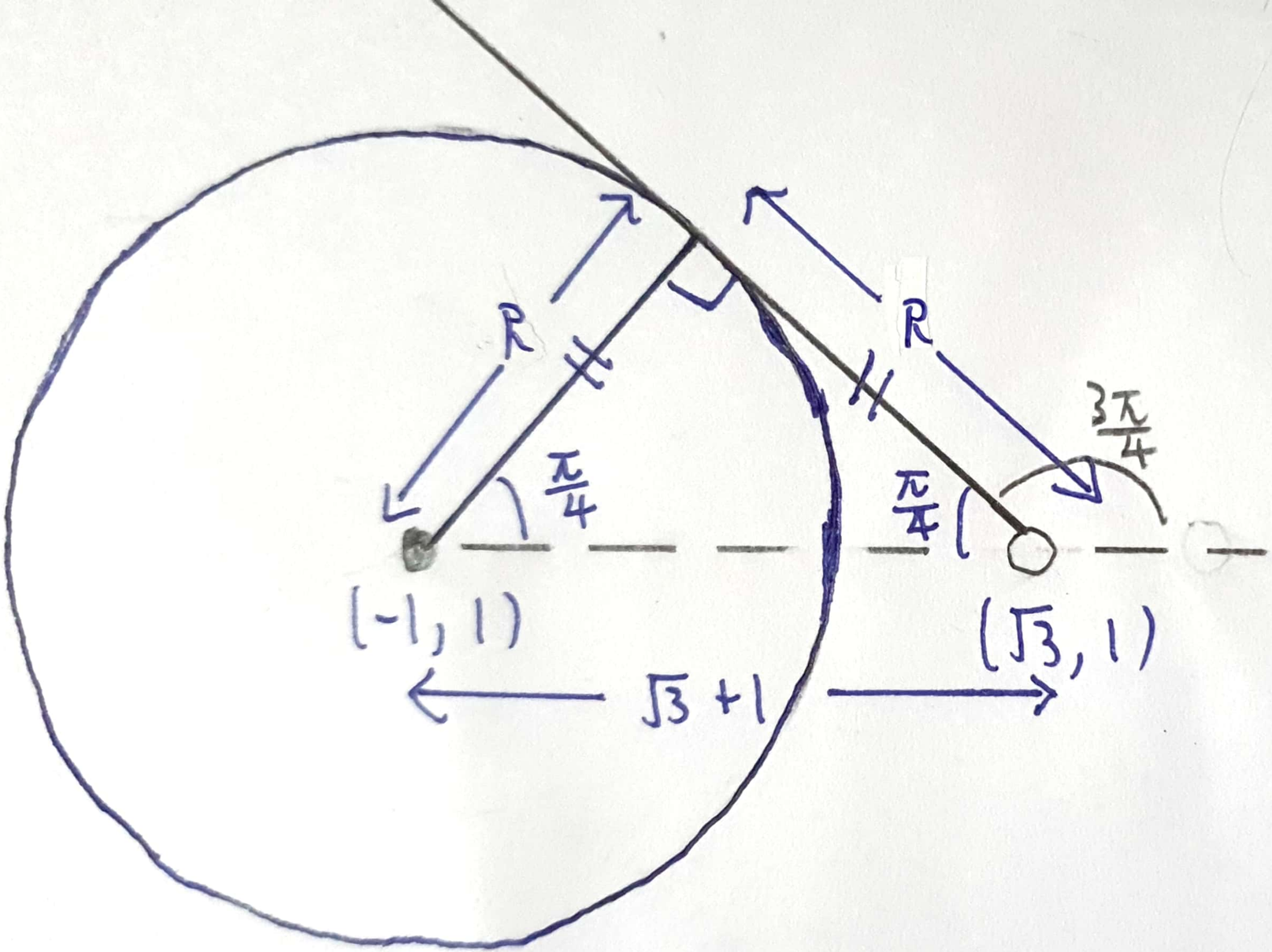
$$y = \frac{\sqrt{3}-1}{2}$$

$$a = \sqrt{3} - \frac{\sqrt{3}-1}{2}$$

$$= \frac{\sqrt{3}+1}{2}$$

$$z = \frac{\sqrt{3}-1}{2} + \left(\frac{\sqrt{3}+1}{2} + 1\right)i$$

$$= \frac{\sqrt{3}-1}{2} + \left(\frac{\sqrt{3}+3}{2}\right)i$$



$$2R^2 = (\sqrt{3}+1)^2$$

$$R = \frac{\sqrt{3}+1}{\sqrt{2}}$$

OR

$$R = (\sqrt{3}+1)\cos\left(\frac{\pi}{4}\right)$$

$$= \frac{\sqrt{3}+1}{\sqrt{2}}$$