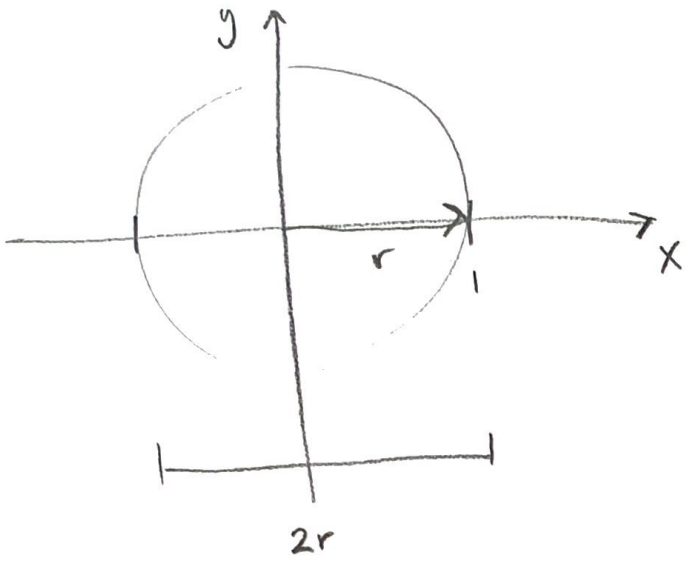
PI Calculations



$$A_c = \pi r^2$$

$$A_s = 4r^2$$

Now, the ratio:

$$\frac{A_c}{A_s} = \frac{\pi r^2}{4r^2} = \frac{\pi}{4}$$

$$\pi = 4\,\frac{A_c}{A_s}$$

By randomly generating N points inside the square, approximately $N \cdot \frac{\pi}{4}$ of the N points should fall in the circle.

$\therefore$

$$\pi = 4\,\frac{M}{N} \quad , \quad \frac{A_c}{A_s} = \frac{M}{N} = \frac{\text{hits}}{(\text{hits}+\text{misses})}$$