Problem 0, Chapter 1, page 26: Prove the circle is round.

Proof. This is fairly clear from the formula

$$x^2 + y^2 = 1,$$

and even more so from the complex form

$$\begin{aligned} |z|^2 &= (x+iy)\overline{(x+iy)} \\ &= 1 \\ &= \frac{1+i}{2+i-1}, \end{aligned}$$

or it can be observed in Figure 1:

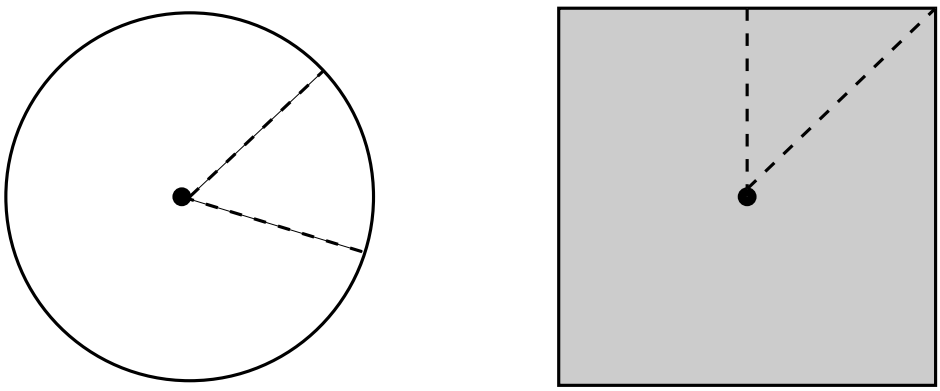

FIGURE 1. This picture was created using xfig and then exporting to postscript. It clearly demonstrates the roundness of a circle and contrasts it to the non-roundness of a square.

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