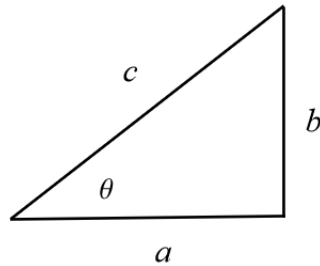## Question Q1.9

The quantity $\pi = 3.14159\ldots$ is a number with no dimensions, since it is a ratio of two lengths. Describe two or three other geometrical or physical quantities that are dimensionless.

Solution

The sine and cosine of an angle are dimensionless because they're ratios of the sides of a right triangle.

$$\sin\theta = \frac{b}{c} \qquad \cos\theta = \frac{a}{c}$$