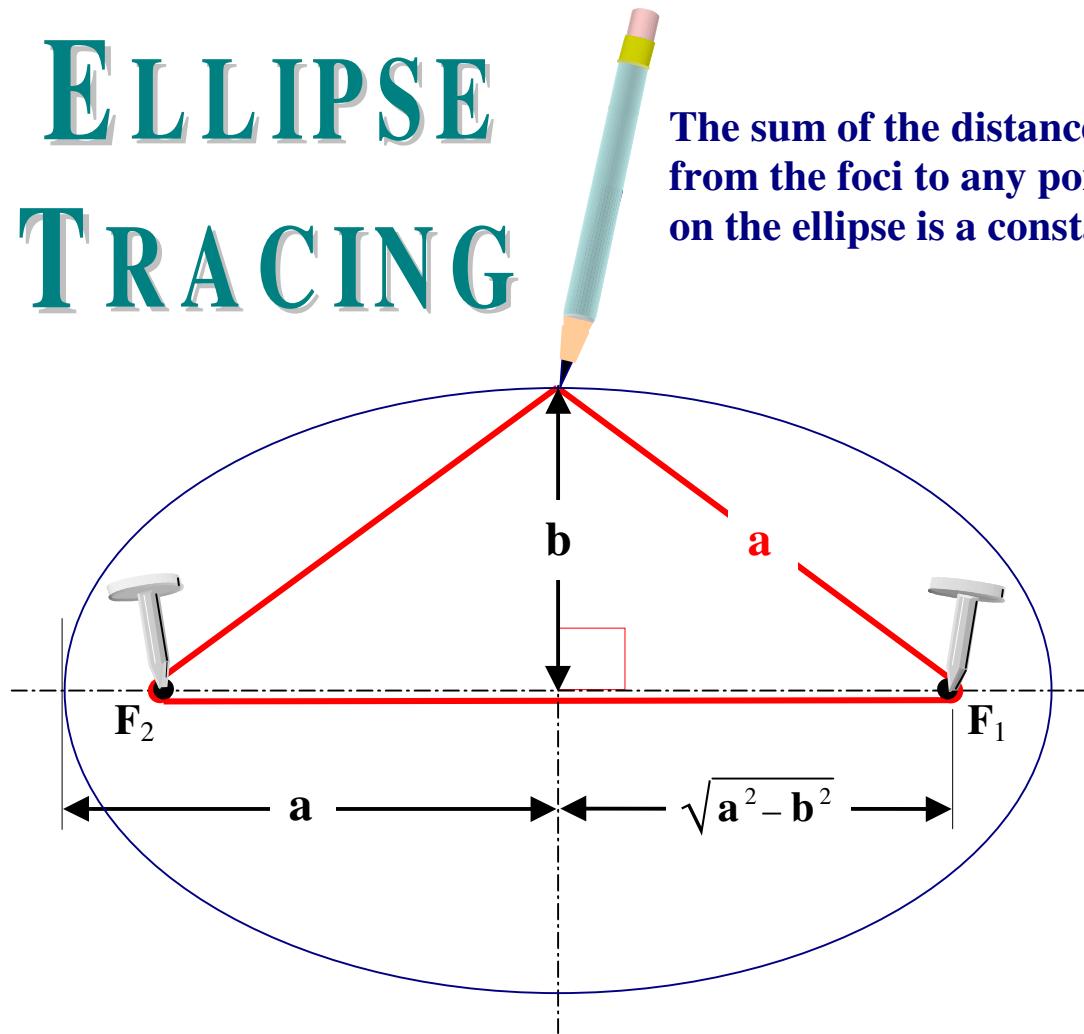


ELLIPSE TRACING

The sum of the distances from the foci to any point on the ellipse is a constant.



Construct the major and minor axes or dimensions, intersecting at right angles at the center of the ellipse.

$$a = \text{major axis} \div 2, \quad b = \text{minor axis} \div 2$$

Using a compass or by measurement, locate foci F_1 and F_2 as shown in the diagram. The center to focus distance along the major axis can also be calculated by the Pythagorean Theorem:

$$\text{Center to Focus Distance} = \sqrt{a^2 - b^2}$$

Set tacks or nails at foci F_1 and F_2 . Pull a loop of **string** made of a non-elastic material taut around the nails with a pencil. The overall length of the string equals **the distance between the foci + 2a**, permitting the pencil to reach the point on the ellipse at distance **b** from the center along the minor axis. Move the pencil to trace the curve, keeping it perpendicular to the drawing surface to ensure accuracy.