

8. The angles at the vertices of two triangles are both 67° , and the sides about these angles are 40, 60 and 44, 66 millimetres. Construct the triangles. Show by measurement that triangles are equiangular, and that the remaining sides are as 10 : 11.

9. Construct an angle BAC of 39° , and from P in AC draw PN perpendicular to AB. Measure the lengths of AP, AN, PN in millimetres, and find the numerical values to two places of decimals of the ratios

$$\frac{PN}{AP}, \quad \frac{AN}{AP} \quad \text{and} \quad \frac{PN}{AN}.$$

10. In the preceding question, keeping to the angle of 39° , take the point P in different positions on AC, drop the perpendicular PN, for each position of P repeat the measurements and calculate to two decimal places the values of the preceding ratios. Compare values with those already obtained.

11. Keeping to same angle 39° , take the point P in AB and drop PN perpendicular on AC. Again calculate these ratios.

State your conclusion as to the values of these ratios,—perp. to hyp. ; base to hyp. ; perp. to base—so far as the angle 39° is concerned.

12. BC of a right-angled triangle ABC ($C=90^\circ$) is found to be 748 ft., and the angle ABC is 39° . Use the results of the three preceding questions to find approximately the lengths of AC and AB in feet.