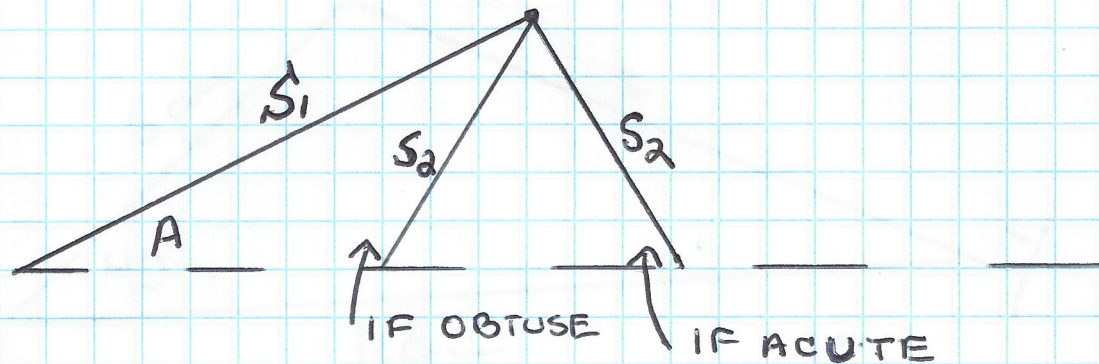


THE AMBIGUOUS CASE (SSA)



8.7 LAW OF COSINES

THE LAW OF COSINES IS AN EXTENSION OF THE PYTHAGOREAN THEOREM TO NON RIGHT TRIANGLES:

$$a^2 = b^2 + c^2 - 2bc \cos A$$

$$b^2 = a^2 + c^2 - 2ac \cos B$$

$$c^2 = a^2 + b^2 - 2ab \cos C$$

LAW OF SINES

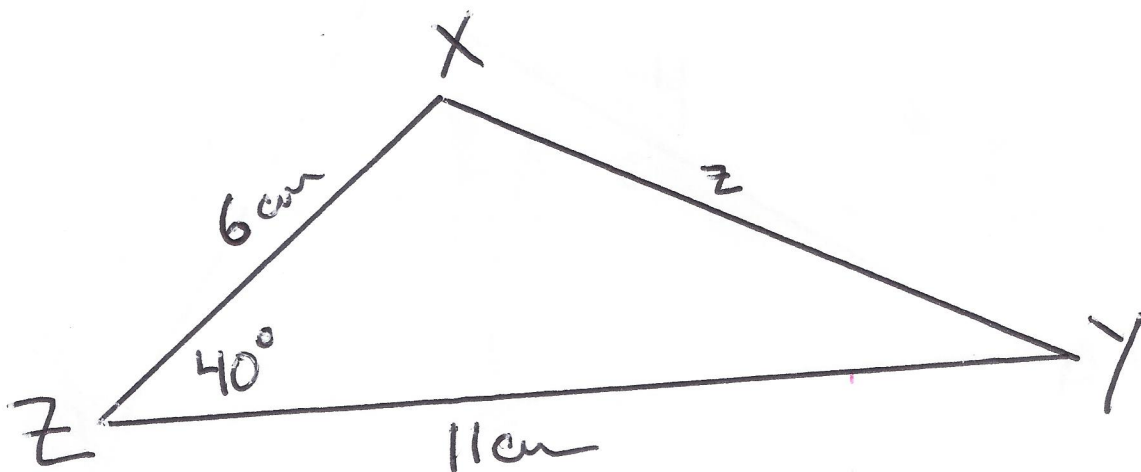
S-A-A

S-S-A

LAW OF COSINES

S-A-S

S-S-S

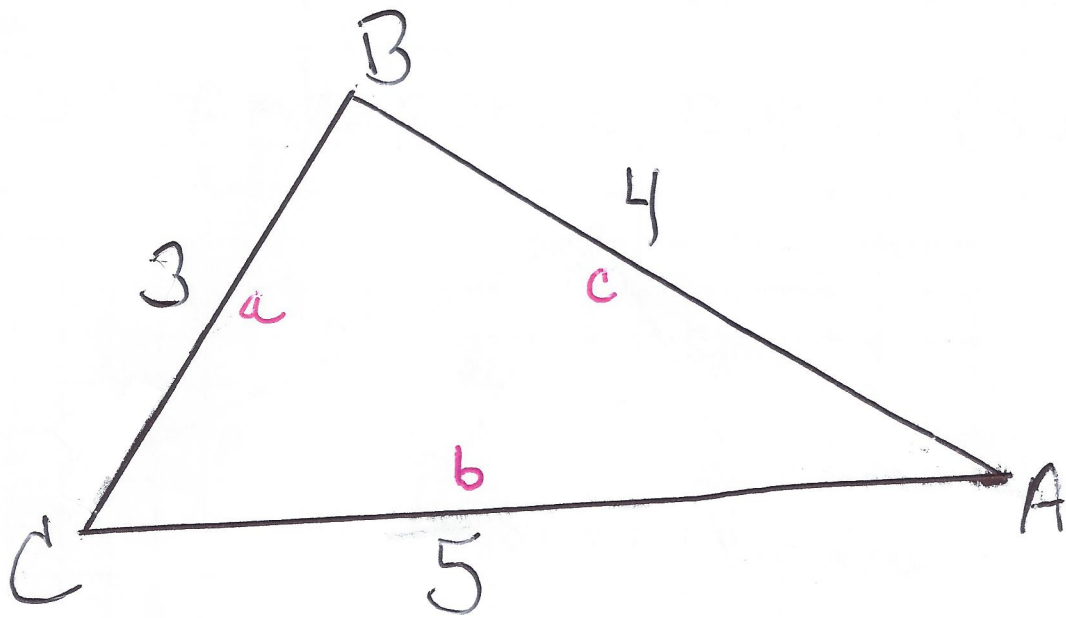


Find Length of z To the tenths place

$$z^2 = 11^2 + 6^2 - 2(11)(6) \cos 40^\circ$$

$$z^2 = 55.88$$

$$z = 7.5 \text{ cm}$$



Find $m\angle A$ TO THE TENTHS PLACE

$$3^2 = 5^2 + 4^2 - 2(5)(4)\cos A$$

$$9 = 25 + 16 - 40\cos A$$

$$9 = 41 - 40\cos A$$

$$-32 = -40\cos A$$

$$.8 = \cos A$$

$$\cos^{-1}(.8) = 36.9^\circ = m\angle A$$