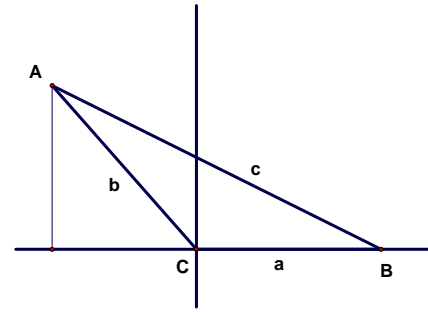
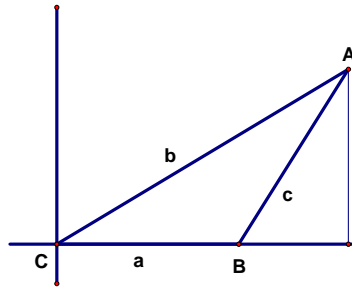
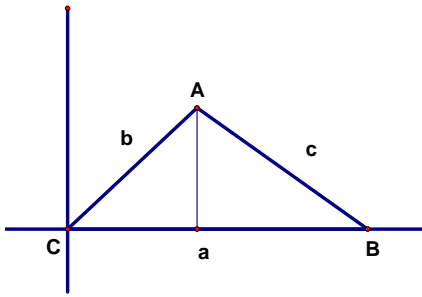


LAW OF COSINES



$$A(b \cos C, b \sin C)$$

$$B(a, 0)$$

$$C(0, 0)$$

By the distance formula:

$$c = \sqrt{(b \cos C - a)^2 + (b \sin C - 0)^2}$$

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

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

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

Other forms:

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

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

USES: Given at least two sides (SAS, SSS, SSA)