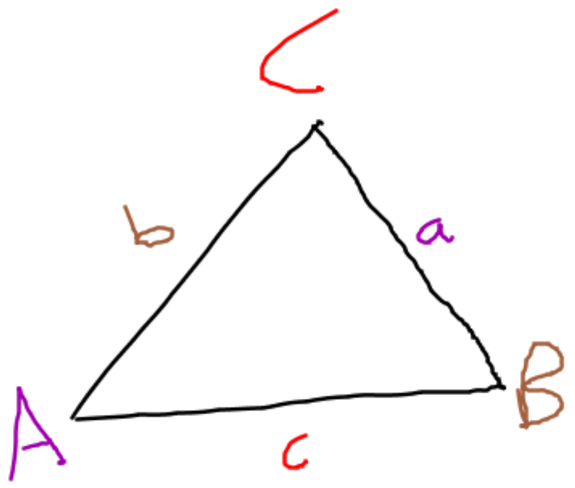
5.7 Cosine Law



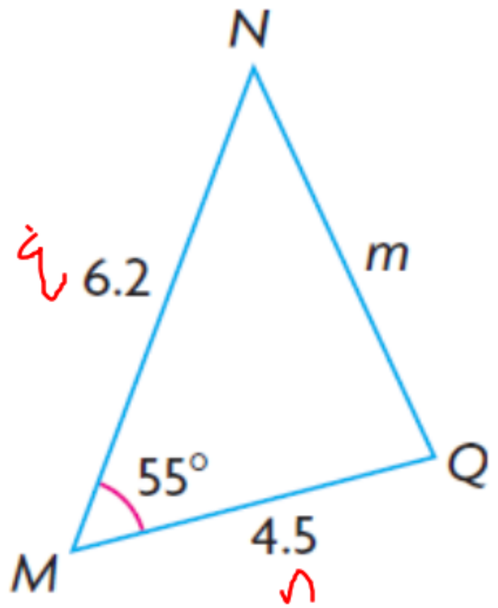
$$\rightarrow a^2 = b^2 + c^2 - 2bc\cos A$$

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

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

$$A = \cos^{-1}\left(\frac{a^2 - b^2 - c^2}{-2bc}\right) \quad \text{or} \quad A = \cos^{-1}\left(\frac{b^2 + c^2 - a^2}{2bc}\right)$$

$$B = \cos^{-1}\left(\frac{b^2 - a^2 - c^2}{-2ac}\right) \qquad C = \cos^{-1}\left(\frac{c^2 - a^2 - b^2}{-2ab}\right)$$



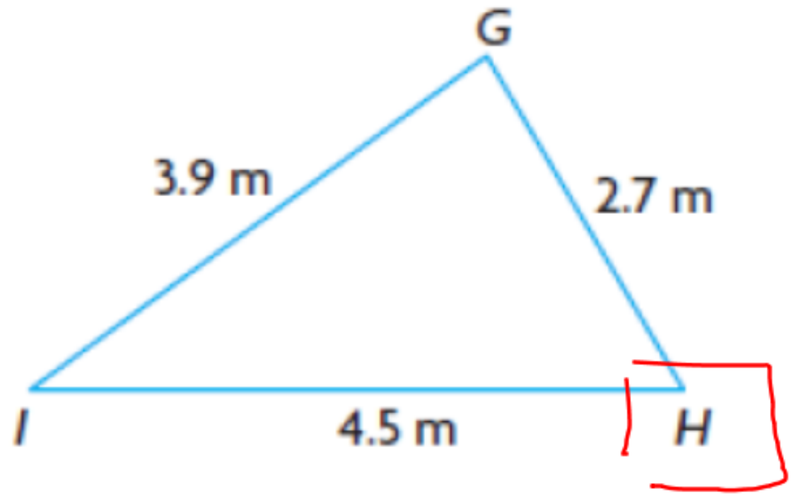
$$m^2 = n^2 + q^2 - 2nq\cos M$$

$$m^2 = 4.5^2 + 6.2^2 - 2(4.5)(6.2)\cos 55^\circ$$

$$m^2 = 26.68$$

$$m = 5.165\ldots$$

$$m = 5.2$$



$$H = \cos^{-1}\left(\frac{h^2 - i^2 - g^2}{-2ig}\right)$$

$$H = \cos^{-1}\left(\frac{3.9^2 - 2.7^2 - 4.5^2}{-2(2.7)(4.5)}\right)$$

$$H = \cos^{-1}\left(\frac{+12.33}{+24.3}\right) = 60^\circ$$