

三角関数公式一覧

三角関数の相互関係

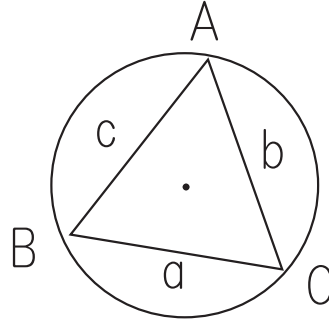
$$\sin^2 \theta + \cos^2 \theta = 1$$

$$\tan \theta = \frac{\sin \theta}{\cos \theta}$$

$$1 + \tan^2 \theta = \frac{1}{\cos^2 \theta}$$

正弦定理

$$2R = \frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$



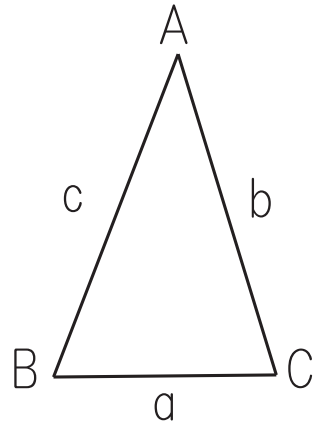
三角形ABCの
外接円の半径をRとした時

余弦定理

$$a^2 = b^2 + c^2 - 2bc \cos A \quad \Rightarrow \quad \cos A = \frac{b^2 + c^2 - a^2}{2bc}$$

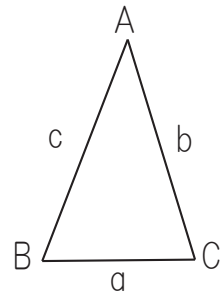
$$b^2 = a^2 + c^2 - 2ac \cos B \quad \Rightarrow \quad \cos B = \frac{a^2 + c^2 - b^2}{2ac}$$

$$c^2 = a^2 + b^2 - 2ab \cos C \quad \Rightarrow \quad \cos C = \frac{a^2 + b^2 - c^2}{2ab}$$



面積

$$S = \frac{1}{2} bc \sin A = \frac{1}{2} ac \sin B = \frac{1}{2} ab \sin C$$



(90 - \theta) (90 + \theta) (180 - \theta) の変換

$$\begin{array}{lll} \sin(90 - \theta) = \cos \theta & \sin(90 + \theta) = \cos \theta & \sin(180 - \theta) = \sin \theta \\ \cos(90 - \theta) = \sin \theta & \cos(90 + \theta) = -\sin \theta & \cos(180 - \theta) = -\cos \theta \\ \tan(90 - \theta) = \frac{1}{\tan \theta} & \tan(90 + \theta) = -\frac{1}{\tan \theta} & \tan(180 - \theta) = -\tan \theta \end{array}$$