

In right triangle ADB, $\angle ABD = 60^\circ$. So, we can determine the trigonometric ratios of angle 60° .

$$\sin 60^\circ = \frac{AD}{AB} = \frac{\frac{\sqrt{3}}{2}a}{a} = \frac{\sqrt{3}}{2}$$

$$\cos 60^\circ = \frac{BD}{AB} = \frac{\frac{a}{2}}{a} = \frac{1}{2}$$

$$\tan 60^\circ = \frac{AD}{BD} = \frac{\frac{\sqrt{3}}{2}a}{\frac{a}{2}} = \sqrt{3}$$

$$\csc 60^\circ = \frac{1}{\sin 60^\circ} = \frac{2\sqrt{3}}{3}$$

$$\sec 60^\circ = \frac{1}{\cos 60^\circ} = 2$$

$$\cot 60^\circ = \frac{1}{\tan 60^\circ} = \frac{1}{\sqrt{3}}$$

Now, let us see how the values are determined for the angle

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