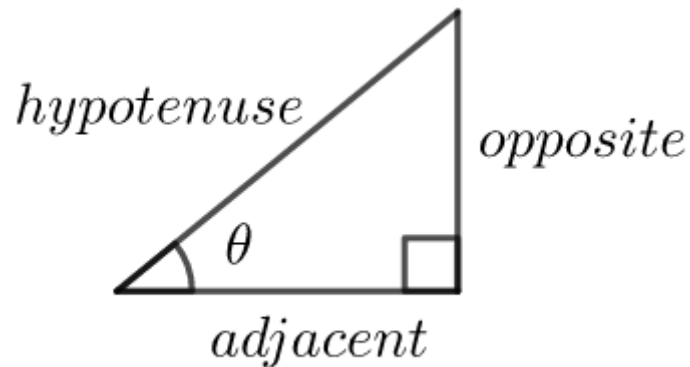


Right-angled Triangled Trigonometry

Trigonometric Ratios



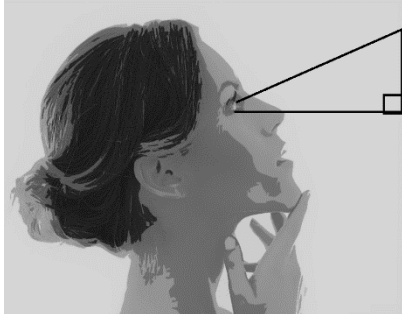
$$\sin \theta = \frac{\textit{opposite}}{\textit{hypotenuse}}$$

$$\cos \theta = \frac{\textit{adjacent}}{\textit{hypotenuse}}$$

$$\tan \theta = \frac{\textit{opposite}}{\textit{adjacent}}$$

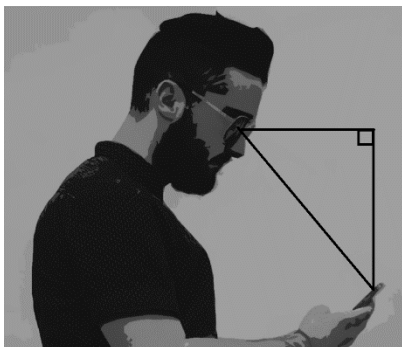
Angle of Elevation

Looking upwards...the angle formed between the horizontal line and the line of sight when an observer looks upwards



Angle of Depression

Looking downwards...the angle formed between the horizontal line and the line of sight when an observer looks upwards

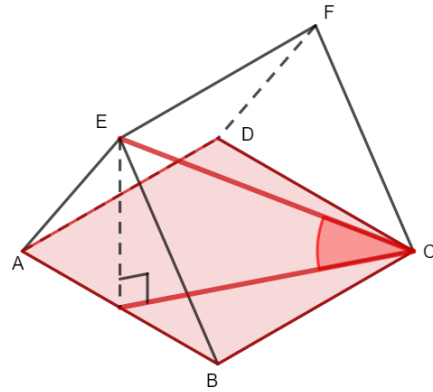
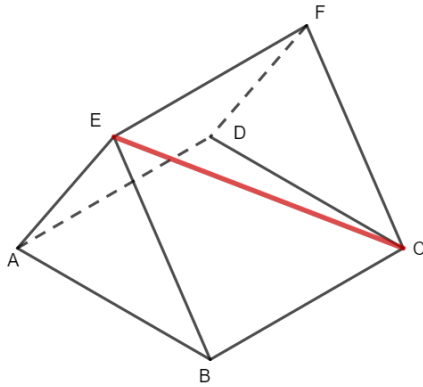


3D Trigonometry

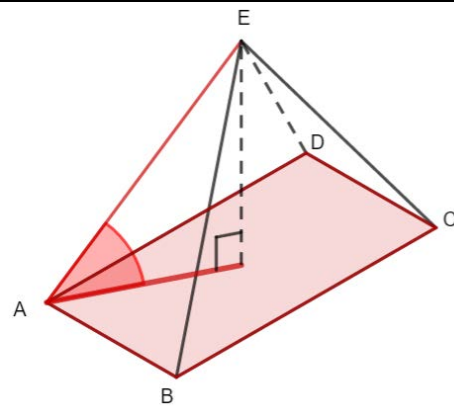
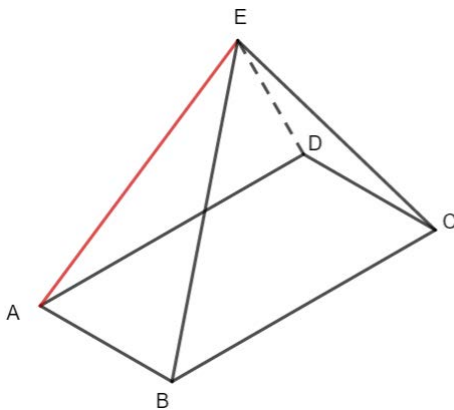
For trigonometry in 3D, the challenge is to visualize and identify the relevant right-angled triangle. After that, the trigonometry is easy.

Here are some diagrams that will help you see the triangle and angle required

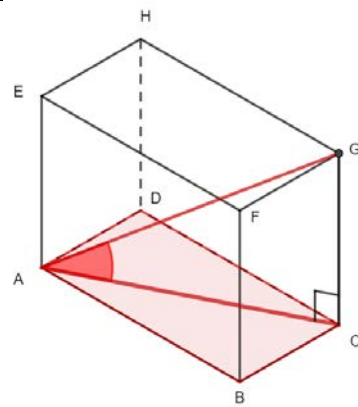
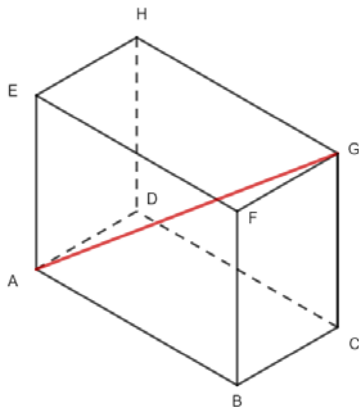
The angle between EC and the plane ABCD



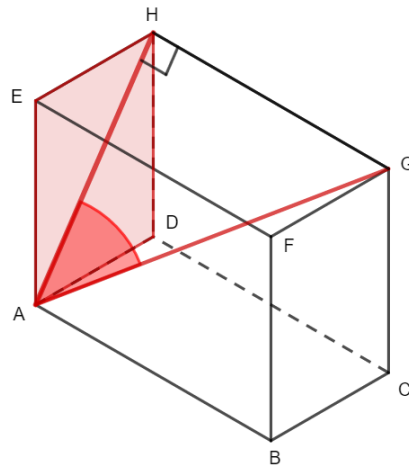
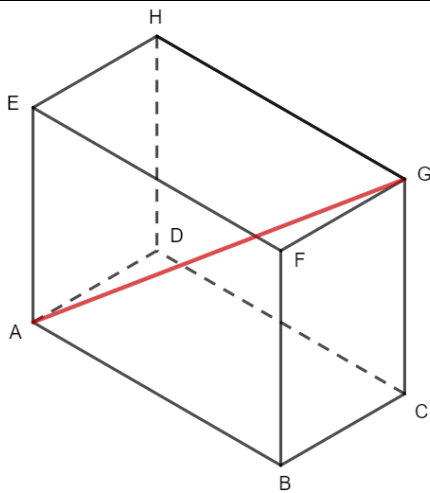
The angle between EA and the plane ABCD



The angle between GA and the plane ABCD



The angle between **GA** and the **plane ADHE**



The angle between **GA** and the **plane CDHG**

