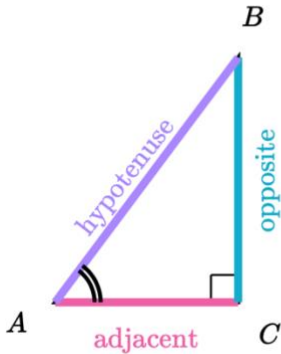


NOTES :

CHAPTER 10 TRIGONOMETRY

1. BASIC TRIGONOMETRIC RATIOS



$$\sin(A) = \frac{\text{opposite}}{\text{hypotenuse}}$$

$$\cos(A) = \frac{\text{adjacent}}{\text{hypotenuse}}$$

$$\tan(A) = \frac{\text{opposite}}{\text{adjacent}}$$

Acronym
Part

Verbal Description

SOH

Sine is **O**pposite over
Hypotenuse

CAH

Cosine is **A**djacent over
Hypotenuse

TOA

Tangent is **O**pposite over
Adjacent

*Images taken from *Khan Academy*

2. TRIGONOMETRIC VALUES OF NEGATIVE ANGLES

$$\begin{aligned}\sin(-\theta) &= -\sin \theta \\ \cos(-\theta) &= \cos \theta \\ \tan(-\theta) &= -\tan \theta\end{aligned}$$

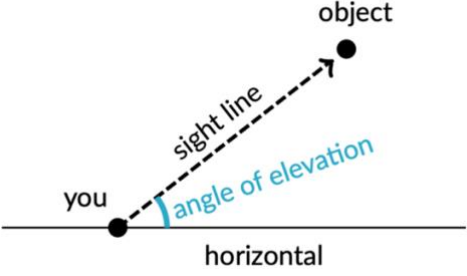
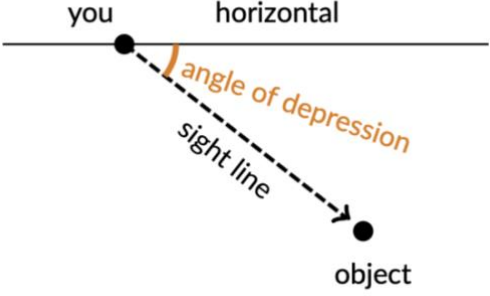
3. SINE AND COSINE OF COMPLEMENTARY ANGLES

$$\sin(\theta) = \cos(90^\circ - \theta)$$

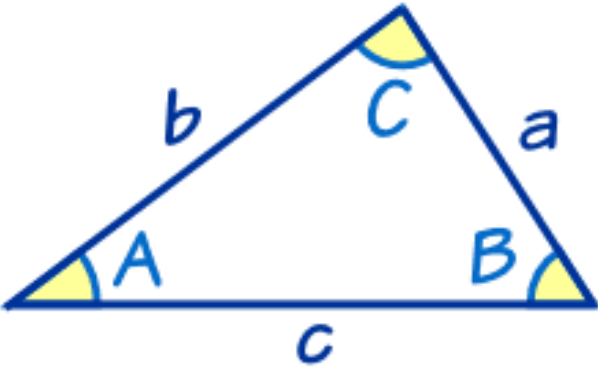
4. SINE AND COSINE OF SUPPLEMENTARY ANGLES

$$\begin{aligned}\sin(\theta) &= \sin(180 - \theta) \\ \cos(\theta) &= -\cos(180 - \theta)\end{aligned}$$

5. ANGLE OF ELEVATION vs. ANGLE OF DEPRESSION

ANGLE OF ELEVATION	ANGLE OF DEPRESSION
<p>When you see an object above you, there's an angle of elevation between the horizontal and your line of sight to the object.</p>  <p>The diagram shows a horizontal line labeled 'horizontal' with a point labeled 'you' on the left. A dashed line labeled 'sight line' extends from 'you' to a point labeled 'object' above the horizontal line. A blue arc between the horizontal line and the sight line is labeled 'angle of elevation'.</p>	<p>Similarly, when you see an object below you, there's an angle of depression between the horizontal and your line of sight to the object.</p>  <p>The diagram shows a horizontal line labeled 'horizontal' with a point labeled 'you' on the left. A dashed line labeled 'sight line' extends from 'you' to a point labeled 'object' below the horizontal line. An orange arc between the horizontal line and the sight line is labeled 'angle of depression'.</p>

6. SINE LAW AND COSINE LAW

 <p>A triangle with vertices at the bottom-left, bottom-right, and top. The bottom-left angle is labeled 'A', the bottom-right angle is labeled 'B', and the top angle is labeled 'C'. The side opposite angle A is labeled 'a', the side opposite angle B is labeled 'b', and the side opposite angle C is labeled 'c'.</p>	<p style="text-align: center;">SINE LAW</p> $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$ <p style="text-align: center;">COSINE LAW</p> $a^2 = b^2 + c^2 - 2bc \cos A$ $b^2 = a^2 + c^2 - 2ac \cos B$ $c^2 = a^2 + b^2 - 2ab \cos C$
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7. BEARINGS

