



3055 BA SANGAM COLLEGE

PH: 6674003/9264117 E-mail: basangam@connect.com.fj



WORKSHEET 8

SCHOOL: BA SANGAM COLLEGE

YEAR: 10

SUBJECT: MATHEMATICS

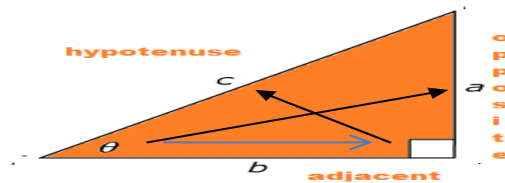
NAME OF STUDENT: _____

STRAND	4- GEOMETRY
SUB-STRAND	TRIGONOMETRIC FUNCTIONS
LEARNING OUTCOME	<ul style="list-style-type: none"> • Describing the three basic trigonometric functions. • Calculating sine, cosine and tangent values of theta and vice versa.

Naming the Sides of a Right-Angled Triangle

- In trigonometry the Greek letter Θ (theta) is used as the name of an angle.
- Using Θ the sides of the triangle can be named.

For example



The sides of the triangle can be labelled as a, b and c. Side a is opposite of Θ , side b adjacent to Θ and side c is the hypotenuse (the longest side) opposite the right angle. From this, 3 functions can be introduced.

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

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

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

$$\text{NOTE : } \sin \theta \uparrow \cos \theta = \tan \theta$$

In short, we say- **SOH, CAH, TOA**

Using A Calculator

- A calculator can be used to find the values of the trigonometric ratios sin, cos and tan for the given angle where the **angle is measured in degrees**.
- In the same way if the trigonometric ratios are given then the angle can also be found using the inverse function

Example One: Find $\sin 30^\circ$

Solution : Using the calculator

Press sin
Press 30
Press =

$$\sin 30 = 0.5.$$

Example 2: Find $\cos 60^\circ$

Solution: Press $\cos 60^\circ$ in your calculator

$$\cos 60^\circ = 0.5$$

EXAMPLE – FINDING THE INVERSE

- To find the angle θ , we need to take the inverse of the function

Find $\sin \theta = 0.66$
Solution

Press shift
Press sin
Press 0.66 =

$\sin^{-1}(0.66) = 41.30$ (2 dp)

EXAMPLE 2: Find the value of θ in

$$\tan \theta = 0.5$$

$$\theta = \tan^{-1}(0.5)$$

$$\theta = 26.57^\circ$$

Activity

1. Evaluate the following.

(1marks each)

(a) $\sin 60^\circ$

(b) $\tan 34^\circ$

(c) $\cos 124^\circ$

2. Find the value of θ .

(2marks each)

(a) $\cos \theta = 0.54$

(b) $\sin \theta = 0.76$

(c) $\tan \theta = 0.45$

THE END