3055 BA SANGAM COLLEGE

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

WORKSHEET 10

SCHOOL: BA SANGAM COLLEGE   **YEAR: 10**

SUBJECT: MATHEMATICS   **NAMEOF STUDENT: _____**

STRAND	4- GEOMETRY
SUB-STRAND	TRIGNOMETRIC FUNCTIONS
LEARNING OUTCOME	• To Calculate Unknown angle of a right-angle triangle

Applications of SOH, CAH, TOA

- In the previous lesson we used the **SOH, CAH, TOA** to find the missing side of a right-angle triangle
- We can also use **SOH, CAH, TOA** to find a missing angle of a right-angled triangle given any two sides
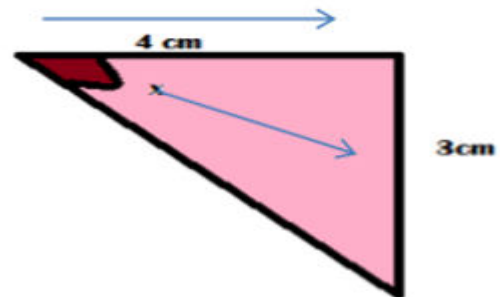
EXAMPLE

For the right - angled triangle given, find angle x

4 cm

x

3 cm
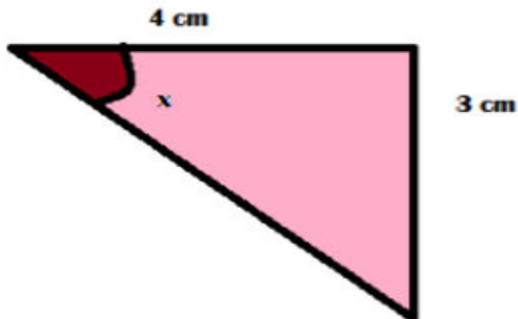
Step one

Identify the sides and the angles.

4 cm

x

3cm

$\theta = x$, opposite $- 3cm$, adjacent $- 4cm$

STEP 3

Step two

Determine the trig function to use

Since o and a are given

TOA is used.

$$\tan \theta = \frac{o}{a} \qquad \tan x = \frac{3}{4}$$

Since the angle is the unknown we take $\tan^{-1}$ on both sides. $\tan^{-1} 3/4 = \underline{36.87°}$

- _**NOTE** – The calculator has to be in Degree (D) mode when finding the angle_

EXAMPLE 2

The right angled triangle below is also an isosceles triangle. Find angle x

Identify the sides and the angles

Step one

Opposite – 1 $\theta = x$ hypotenuse - $\sqrt{2}$

Step two

Identify the trig function to use from

SOH CAH TOA.

Since o and h are given

SOH is used

$$Sin \, \theta = \frac{o}{h}$$

Step three

$$\sin x = 1/\sqrt{2}$$

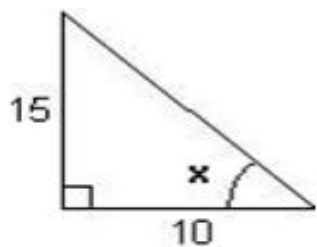$$\sin^{-1}\frac{1}{\sqrt{2}} = 45^{\,0}$$

$$x = \underline{45°}$$
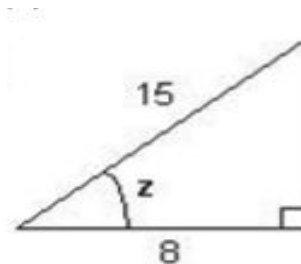
EXERCISE

Find the missing angles in the following triangles by either using SOH, CAH or TOA
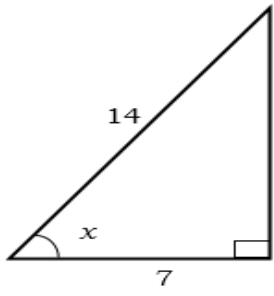
Each question is worth 2 MARKS

a)

b)

c)

d)

14

x

7

ϑ

16

7