Learning Objective:	To: Use SOHCAHTOA to find Missing Angles	Name:	
		Date:	

Do NOW Activity:

1   Work out $\dfrac{5}{6} \times \dfrac{9}{10}$

2   Work out 12.5 × 8.4

3   Evaluate 1^7

4   Expand 3x(4x - 3)

5   Express the speed 50 cm per second as km per hour
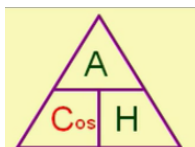
PRIOR KNOWLEDGE CHECK:
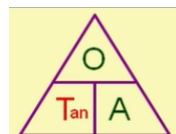1. I can identify and use the correct trigonometric ratio.

THE MAIN EVENT

FACTS
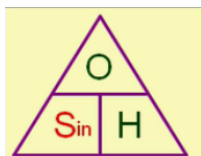
SINE   COSINE   TANGENT

EXAMPLE #1:

Work out the value of x.

15 cm
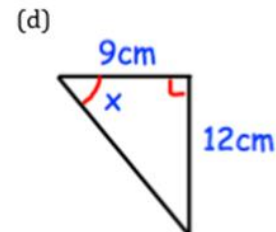
(A) 11 cm $x°$

$\tan x = \dfrac{15}{11}$
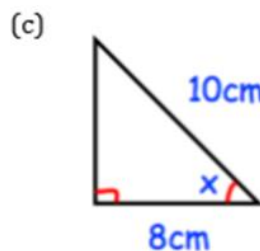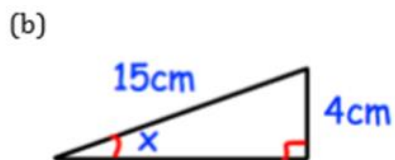
$x = \tan^{-1}\left(\dfrac{15}{11}\right)$

$= 53.7 \ (1dp)$

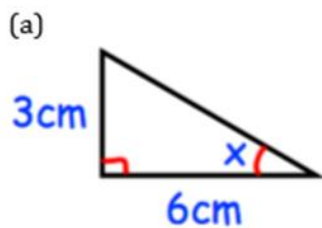Calculate the size of angle ACB.

A

16 mm (H)

(O) 5 mm

B x C

$\sin x = \dfrac{5}{16}$

$x = \sin^{-1}\left(\dfrac{5}{16}\right)$

$= 18.2 \ (1dp)$

4 adj

θ

13 hyp

$\cos x = \dfrac{4}{13}$

$x = \cos^{-1}\left(\dfrac{4}{13}\right)$

$x = 72.1°$

PRACTICE #1:

Question 1:   Find the size of the missing angles in the triangles below.

(a)
3cm x 6cm

(b)
15cm x 4cm

(c)
10cm x 8cm

(d)
9cm x 12cm

(e)

20cm 7cm ✗

(f)

42cm
48cm ✗

(g)

✗
2.8cm
2.5cm

(h)

11cm ✗ 15cm

(i)

90cm
1.2m ✗

(j)

9cm ✗
7.4cm

(k)

5km ✗ 12km

(l)

25cm ✗ 20cm
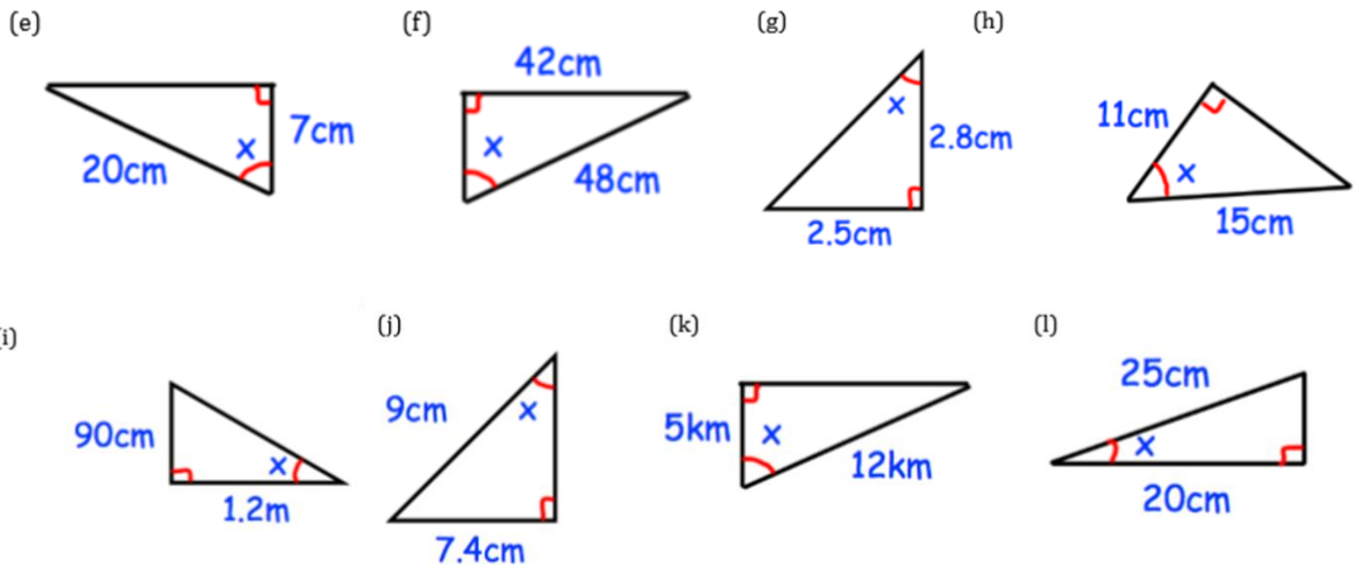
PRACTICE #2:

Question 1: A 4 metre long ladder is placed against a wall. The angle between the ladder and the ground is 75°. How far up the wall does the ladder reach?

Question 2: A 5 metre long ladder is placed against a wall. It reaches 4.3 metres up the wall. What is the angle between the ladder and the ground?

Question 3: A ladder is placed against a wall. The base of the ladder is 4 foot from the bottom of the ladder. The angle between the ladder and the ground is 80°.
What is the length of the ladder?

Question 4: A rectangle is 12cm long and 5cm wide. Find the size of the angle marked x.

12cm
5cm
x
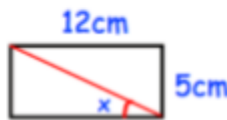
Question 5: (a) Find the length of AC.
(b) Find the length of AB.
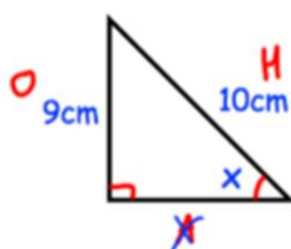(c) Find the perimeter of triangle ABC.
(d) Find the area of triangle ABC.

B
12cm
C 70° A
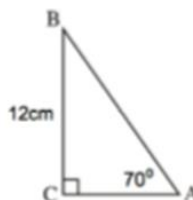
Question 6: A helicopter leaves A and flies 40 miles due east. Then the helicopter flies 10 miles due south and arrives at B. Work out the bearing of B from A.

Question 7: A boat leaves a port and sails 55km due west and then 30km due north and arrives at an oil rig. What is the bearing of the oil rig from the port?

Question 8: Can you spot any mistakes in the question below?

Find the size of the angle x.

O
9cm
H
10cm
x

$\sin x = \frac{9}{10}$

$\sin x = 0.9$

$x = \sin 0.9$

$x = 0.016°$