Name: _____

GCSE (1 – 9)

SOHCAHTOA

Instructions

- Use **black** ink or ball-point pen.
- Answer all questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all your working out.**

Information

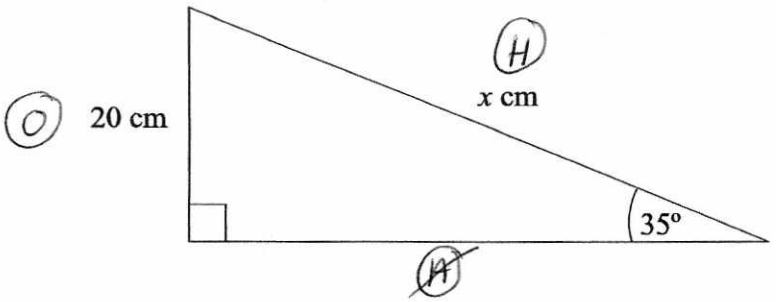
- The marks for each question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end

SOH ~~CAH~~ ~~TOA~~

1



Work out the value of x.

$$\sin(35) = \frac{20}{x}$$

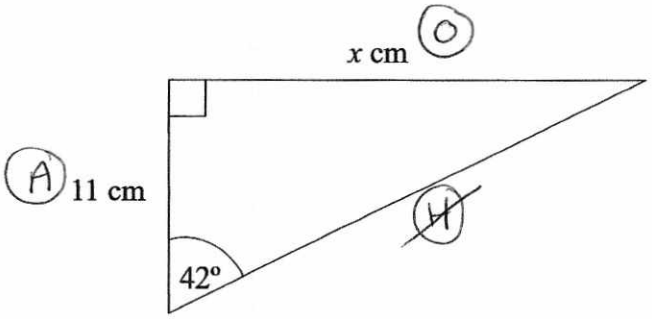
$$x = \frac{20}{\sin(35)}$$

$$= 34.9 \text{ (1dp)}$$

34.9

(Total for question 1 is 2 marks)

2



Work out the value of x.

$$\tan(42) = \frac{x}{11}$$

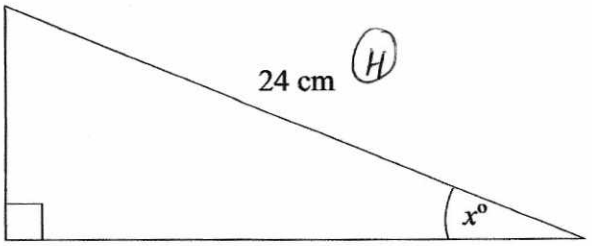
$$x = 11 \times \tan(42)$$

$$= 9.9 \text{ (1dp)}$$

9.9

(Total for question 2 is 2 marks)

3



Work out the value of x.

$\cos x = \frac{16}{24}$

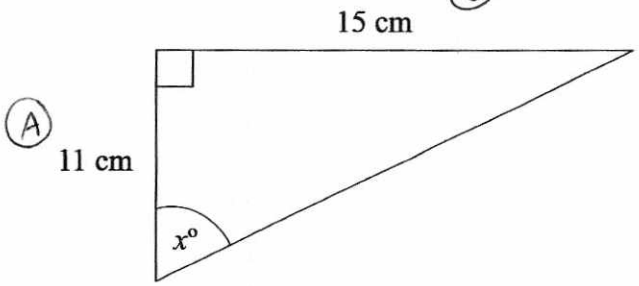
$x = \cos^{-1}\left(\frac{16}{24}\right)$

$= 48.2 \text{ (1dp)}$

48.2

(Total for question 3 is 2 marks)

4



Work out the value of x.

$\tan x = \frac{15}{11}$

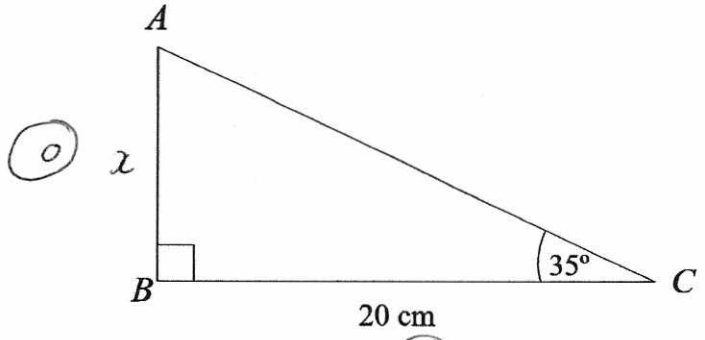
$x = \tan^{-1}\left(\frac{15}{11}\right)$

$= 53.7 \text{ (1dp)}$

53.7

(Total for question 4 is 2 marks)

5



O

A

Calculate the length *AB*.

$$\tan(35) = \frac{x}{20}$$

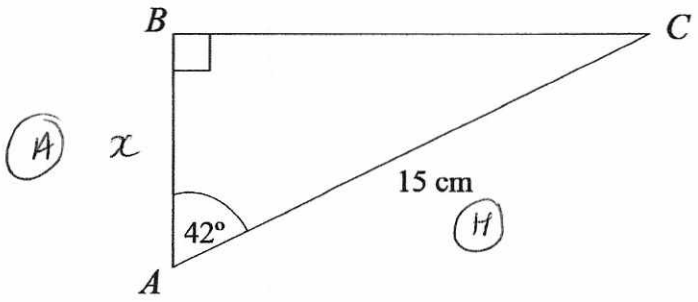
$$x = 20 \times \tan(35)$$

$$= 14.0 \text{ (1dp)}$$

14.0 ..... cm

(Total for question 5 is 2 marks)

6



A

H

Calculate the length *AB*.

$$\cos(42) = \frac{x}{15}$$

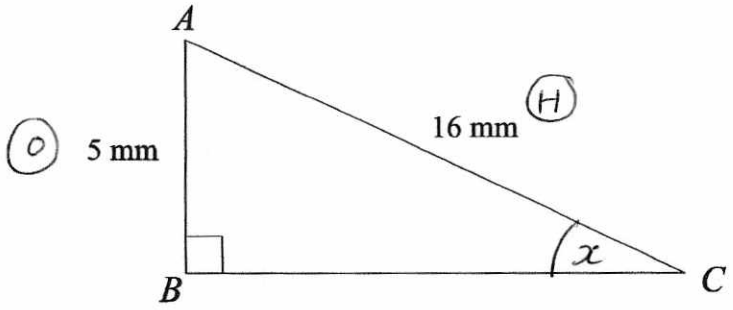
$$x = 15 \times \cos(42)$$

$$= 11.1 \text{ (1dp)}$$

11.1 ..... cm

(Total for question 6 is 2 marks)

7



Calculate the size of angle *ACB*.

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

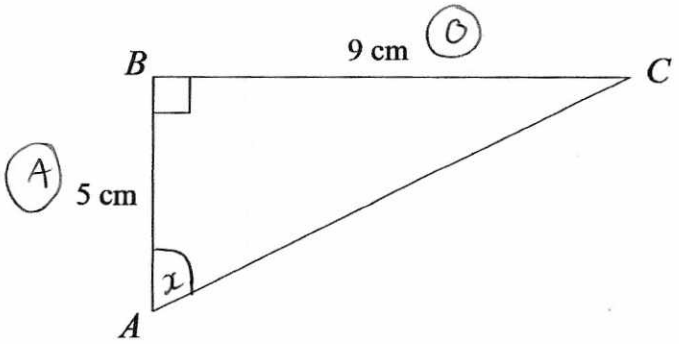
$x = \sin^{-1}\left(\frac{5}{16}\right)$

$= 18.2 \text{ (1dp)}$

18.2 °

(Total for question 7 is 2 marks)

8



Calculate the size of angle *BAC*.

$\tan x = \frac{9}{5}$

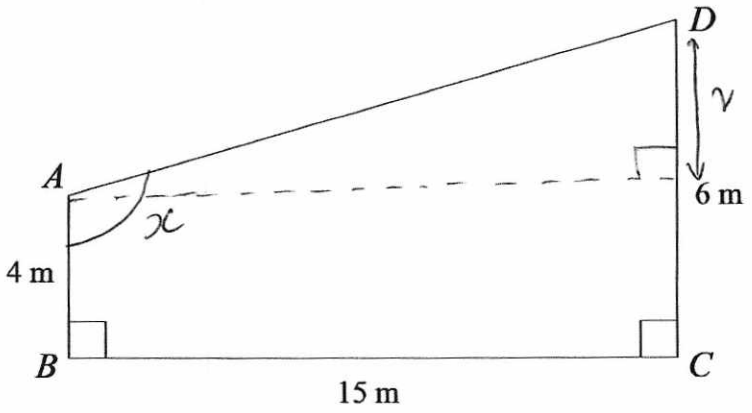
$x = \tan^{-1}\left(\frac{9}{5}\right)$

$= 60.9 \text{ (1dp)}$

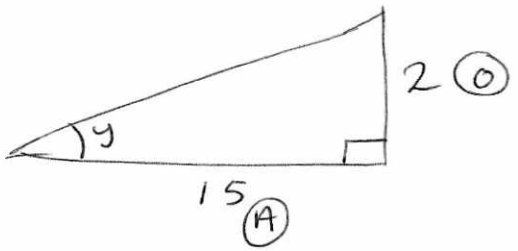
60.9 °

(Total for question 8 is 2 marks)

9



Work out the size of angle *BAD*.
Give your answer to 1 decimal place.



$\tan y = \frac{2}{15}$

$y = \tan^{-1}\left(\frac{2}{15}\right)$

$= 7.6^\circ$ (1 dp)

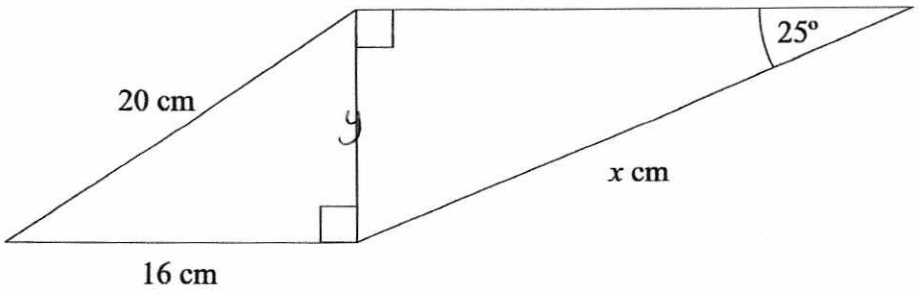
$BAD = 90 + 7.6$

$= 97.6^\circ$

97.6 °

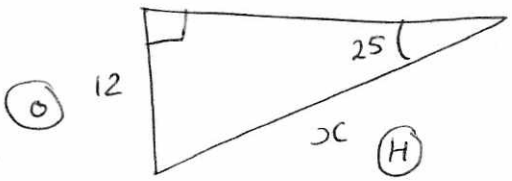
(Total for question 9 is 3 marks)

10



Work out the value of x.
Give your answer to 1 decimal place.

$$y^2 + 16^2 = 20^2$$
$$y^2 = 20^2 - 16^2$$
$$y^2 = 144$$
$$y = 12$$

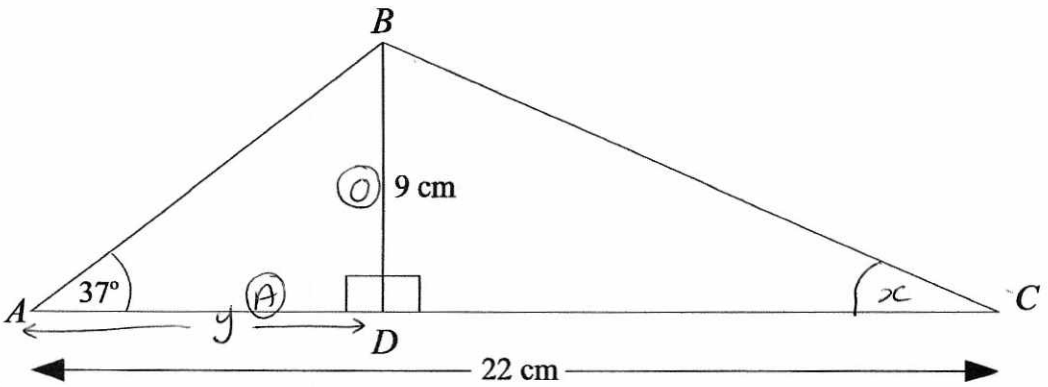


$$\sin(25) = \frac{12}{x}$$
$$x = \frac{12}{\sin(25)}$$
$$= 28.4 \text{ (1dp)}$$

28.4

(Total for question 10 is 4 marks)

11



Work out the size of angle *BCD*.
Give your answer to 1 decimal place.

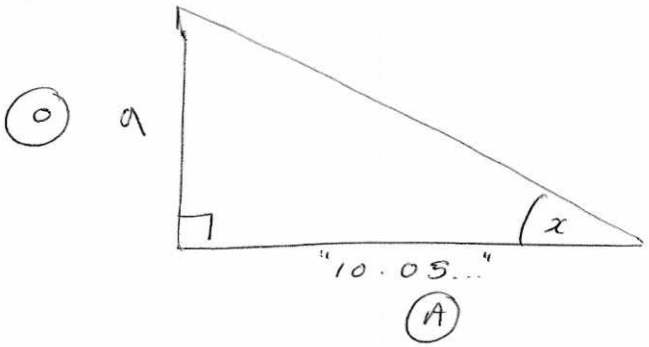
$$\tan(37) = \frac{9}{y}$$

$$y = \frac{9}{\tan(37)}$$

$$= 11.9434...$$

$$CD = 22 - 11.9434$$

$$= 10.05659...$$



$$\tan x = \frac{9}{"10.05..."}$$

$$x = \tan^{-1}\left(\frac{9}{10.05...}\right)$$

$$= 41.8 \text{ 1dp}$$

41.8 °

(Total for question 11 is 4 marks)