1.

Diagram **NOT** accurately drawn

ABC is a right-angled triangle.

Angle $B = 90°$.
Angle $A = 36°$.
$AB = 8.7$ cm.

Work out the length of *BC*.
Give your answer correct to 3 significant figures.

SOH CAH TOA

$$\tan(36) = \frac{x}{8.7}$$

$$x = 8.7 \times \tan(36)$$

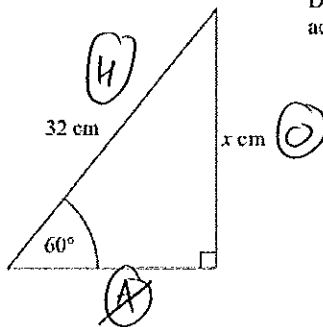................6. 32................ cm
(3 marks)

2.

Diagram **NOT** accurately drawn

Calculate the value of *x*.
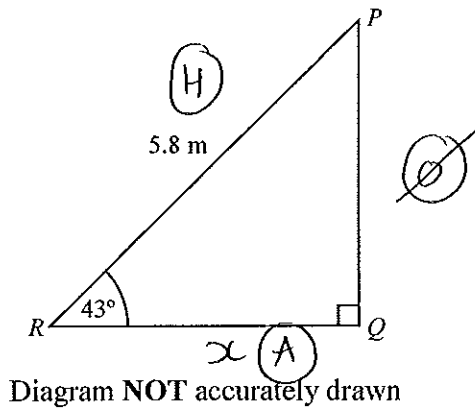Give your answer correct to 3 significant figures.

SOH CAH TOA

$$\sin(60) = \frac{x}{32}$$

$$x = 32 \times \sin(60)$$

$$x = 27.7$$

................27.7 cm................
(3 marks)

3.

Diagram **NOT** accurately drawn

PQR is a triangle.
Angle $Q = 90°$.
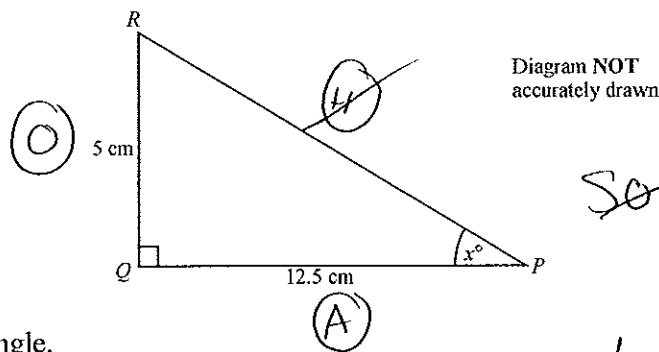Angle $R = 43°$.
PR = 5.8 m.

$$\cos(43) = \frac{x}{5.8}$$

Calculate the length of *QR*.
Give your answer correct to 3 significant figures.

$$5.8 \cos(43) = x$$

...........4.24........... m

(3 marks)

4.

Diagram NOT
accurately drawn

SOH CAH TOA

PQR is a triangle.
Angle $PQR = 90^0$.
PQ = 12.5 cm.
QR = 5 cm.

$$\tan(x) = \frac{5}{12.5}$$

$$x = 21.8°$$

Calculate the value of *x*.
Give your answer correct to 1 decimal place.

...........21.8°...........

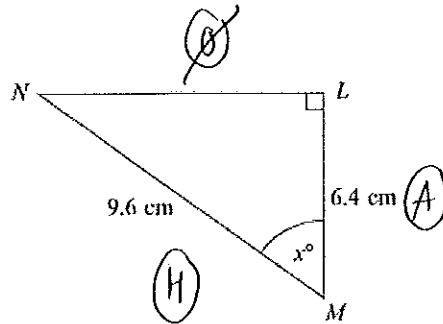**(3 marks)**

5.

LMN is a right-angled triangle.
MN = 9.6 cm.
LM = 6.4 cm.

Calculate the size of the angle marked $x°$.
Give your answer correct to 1 decimal place.

SOH CAH TOA

$$\cos(x) = \frac{6.4}{9.6}$$

$$x = 48.2°$$

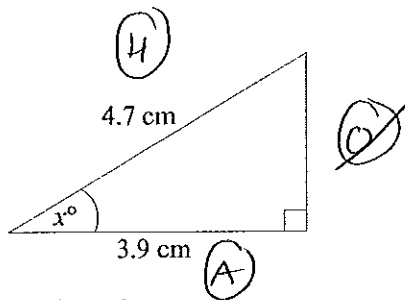.................... 48.2 ....°

(3 marks)

6.

Diagram **NOT**
accurately drawn

Work out the value of *x*.
Give your answer correct to 1 decimal place.
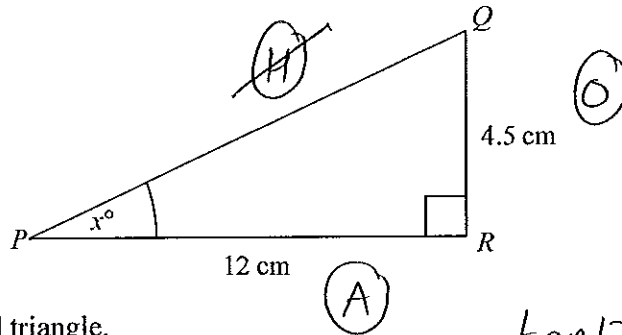
SOH CAH TOA

$$\cos(x) = \frac{3.9}{4.7}$$

$$x = 33.9°$$

x = ... $33.9°$

(3 marks)

7.

Q

H

O

4.5 cm

$x°$

P

12 cm

A

R

PQR is a right-angled triangle.
PR = 12 cm.
QR = 4.5 cm.
Angle PRQ = 90°.

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

$\tan(x) = \dfrac{4.5}{12}$

$x = \tan^{-1}\left(\dfrac{4.5}{12}\right)$

$x = 20.6°$

$x = $ ....20.6°..........

(3 marks)

8. Calculate the size of angle a in this right-angled triangle.
Give your answer correct to 3 significant figures.

H

O

5 m

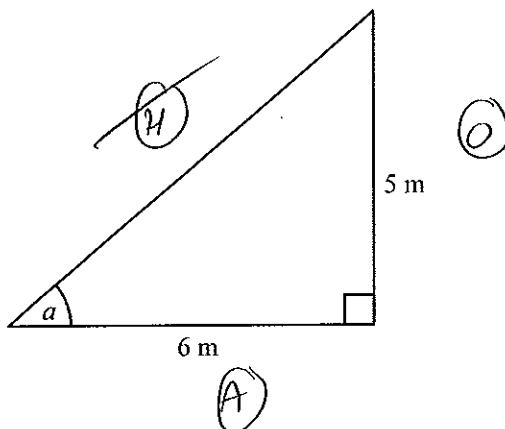a

6 m

A

$\tan(a) = \dfrac{5}{6}$

$a = \tan^{-1}\left(\dfrac{5}{6}\right)$

..........39.8°..........

(3 marks)

9.   *PQR* is a right-angled triangle.
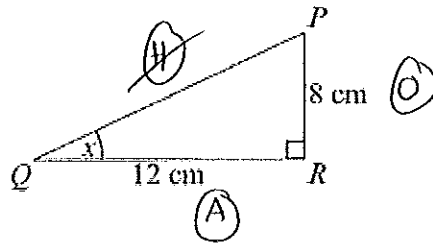
P

Diagram NOT
accurately drawn

8 cm

Q   12 cm   R

x

PR = 8 cm.
QR = 12 cm.

(a) Find the size of the angle marked *x*.
     Give your answer correct to 1 decimal place.

SOH CAH TOA

$\tan(x) = \dfrac{8}{12}$

$x = \tan^{-1}\left(\dfrac{8}{12}\right)$

$x = 33.7°$

.........33.7.........°
                                    (3)

XYZ is a different right-angled triangle.
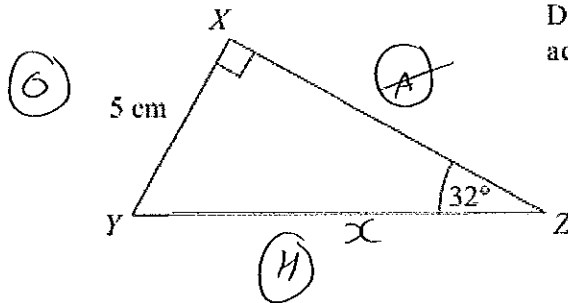
X

Diagram NOT
accurately drawn

5 cm

Y   x   32°   Z

XY = 5 cm.
Angle *Z* = 32°.

(b) Calculate the length *YZ*.
     Give your answer correct to 3 significant figures.

SOH

$\sin(32) = \dfrac{5}{x}$

$x = \dfrac{5}{\sin(32)}$

$x = 9.44$ cm

.........9.44.........cm
                                    (3)

                                    (6 marks)

10. The diagram shows a quadrilateral $ABCD$.

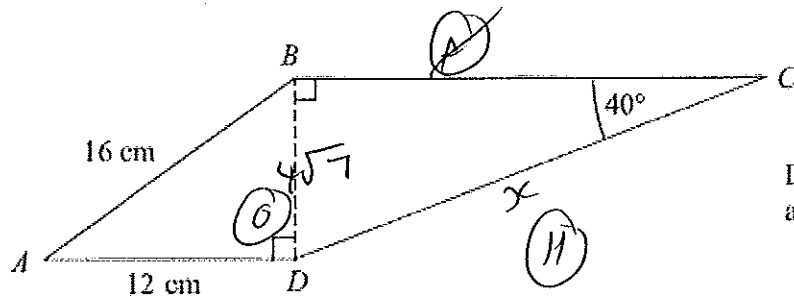

Diagram **NOT** accurately drawn

$AB = 16$ cm.
$AD = 12$ cm.
Angle $BCD = 40°$.
Angle ADB = angle $CBD = 90°$.

Calculate the length of CD.
Give your answer correct to 3 significant figures.

$$BD = \sqrt{16^2 - 12^2}$$

$$= 4\sqrt{7}$$

SOH CAH TOA

$$\sin(40) = \frac{4\sqrt{7}}{x}$$

$$x = \frac{4\sqrt{7}}{\sin(40)}$$

$$x = 16.5$$

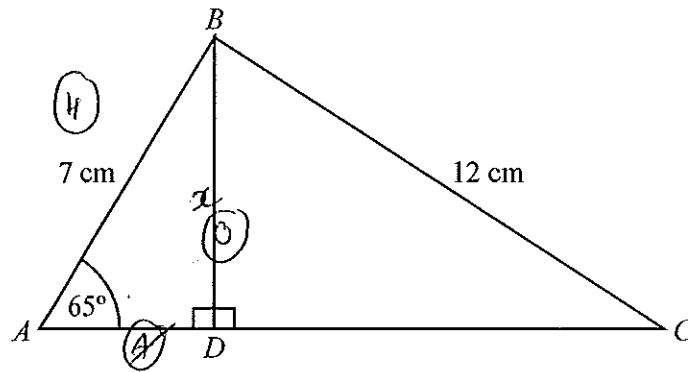.................16.5................. cm

(5 marks)

11.

Diagram **NOT**
accurately drawn

ABC is a triangle.
ADC is a straight line with BD perpendicular to AC.
$AB = 7$ cm.
$BC = 12$ cm.
Angle $BAD = 65°$.

Calculate the length of AC.
Give your answer correct to 3 significant figures.

SOHCAHTOA

$$\sin(65) = \frac{x}{7}$$

$$x = 7 \times \sin(65)$$

$$= 6.344154509$$

$$7^2 = AD^2 + 6.344^2$$

$$AD^2 = 7^2 - 6.344^2$$

$$AD = \sqrt{7^2 - 6.344^2}$$

$$= 2.96 \text{ cm}$$

$$2.958327832 \text{ cm}$$

$$AC = AD + CD$$

$$= 13.14418585$$

$$12^2 = CD^2 + 6.344...^2$$

$$CD = \sqrt{12^2 - 6.344...^2}$$

$$= 10.18585807$$

.........13.1........ cm

(6 marks)