

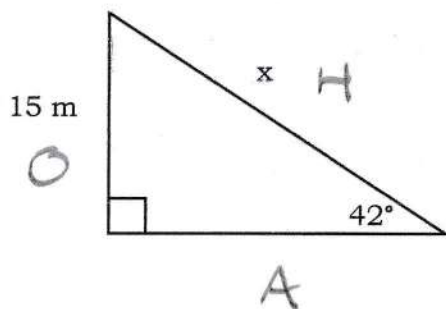
TRIGONOMETRY - PRACTICE QUESTIONS
CALCULATOR ALLOWED



metatutor

1.

Find x to the nearest metre.

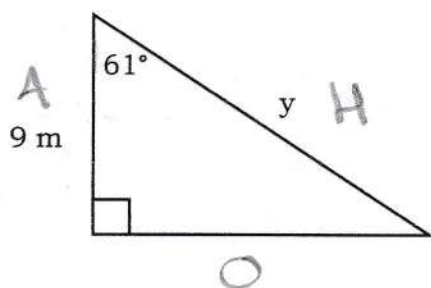


S O H

$$x = \frac{15}{\sin 42} = 22.417\dots$$
$$= \textcircled{22 \text{ m}}$$

2.

Find y to the nearest metre.

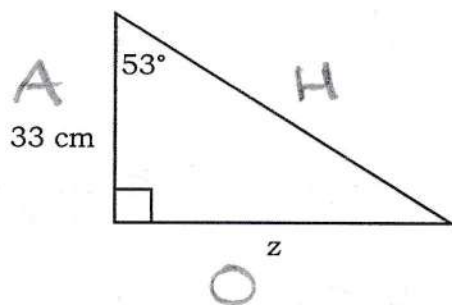


A C H

$$y = \frac{9}{\cos 61} = 18.563\dots$$
$$= \textcircled{19 \text{ m}}$$

3.

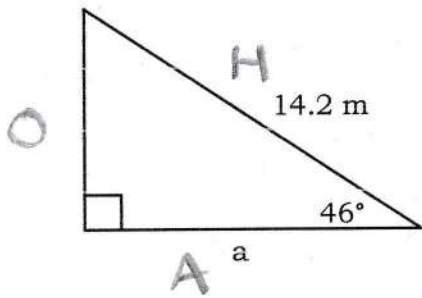
Find z to the nearest centimetre.



T O A

$$z = \tan 53 \times 33$$
$$= 43.792\dots$$
$$= \textcircled{44 \text{ cm}}$$

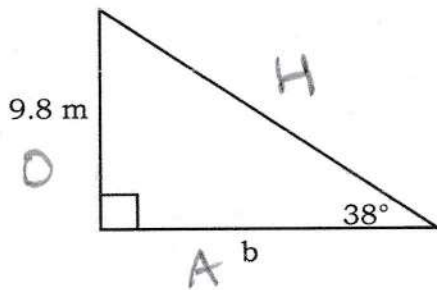
4.
Find a to 1 decimal place.



C^A H

$$\begin{aligned} a &= \cos 46 \times 14.2 \\ &= 9.864\dots \\ &= \textcircled{9.9 \text{ m}} \end{aligned}$$

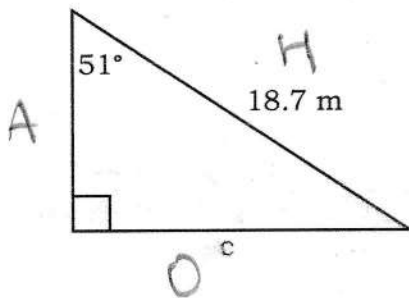
5.
Find b to 1 decimal place.



T^O A

$$\begin{aligned} b &= \frac{9.8}{\tan 38} = 12.543\dots \\ &= \textcircled{12.5 \text{ m}} \end{aligned}$$

6.
Find c to 1 decimal place.

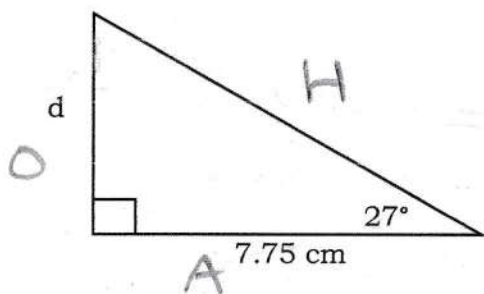


S^O H

$$\begin{aligned} c &= \sin 51 \times 18.7 \\ &= 14.532\dots \\ &= \textcircled{14.5 \text{ m}} \end{aligned}$$

7.

Find d to 2 decimal places.

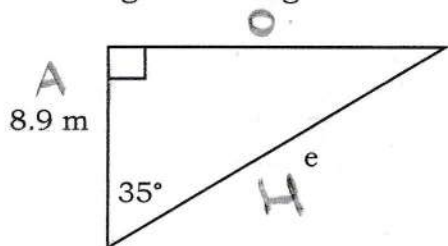


$$\begin{matrix} \circ \\ T & A \end{matrix}$$

$$\begin{aligned} d &= \tan 27 \times 7.75 \\ &= 3.9488\dots \\ &= \boxed{3.95 \text{ cm}} \end{aligned}$$

8.

Find e to 2 significant figures.

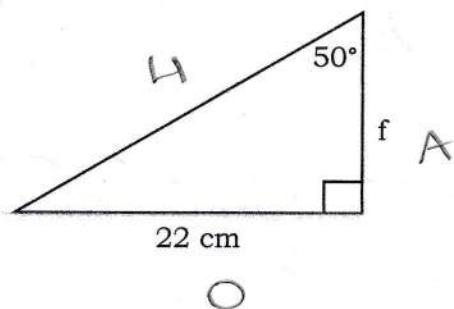


$$\begin{matrix} \circ \\ C & A & H \end{matrix}$$

$$\begin{aligned} e &= \frac{8.9}{\cos 35} \\ &= 10.8648\dots \\ &= \boxed{11 \text{ m}} \end{aligned}$$

9.

Find f to 2 significant figures.

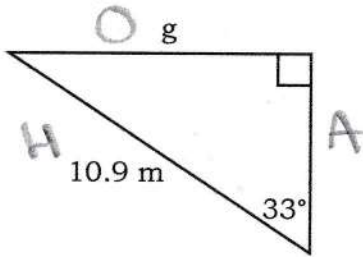


$$\begin{matrix} \circ \\ T & A \end{matrix}$$

$$\begin{aligned} f &= \frac{22}{\tan 50} \\ &= 18.460\dots \\ &= \boxed{18 \text{ cm}} \end{aligned}$$

10.

Find g to 2 significant figures.

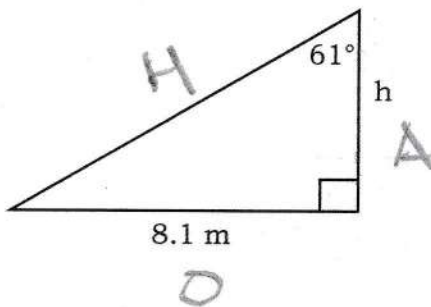


$$S^{\circ} H$$

$$\begin{aligned} g &= \sin 33 \times 10.9 \\ &= 5.936 \dots \\ &= \boxed{5.9 \text{ m}} \end{aligned}$$

11.

Find h to 2 significant figures.

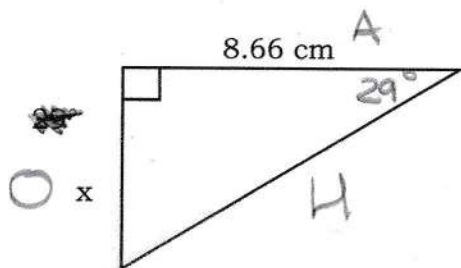


$$T^{\circ} A$$

$$\begin{aligned} h &= \frac{8.1}{\tan 61} \\ &= 4.4899 \dots \\ &= \boxed{4.5 \text{ m}} \end{aligned}$$

12.

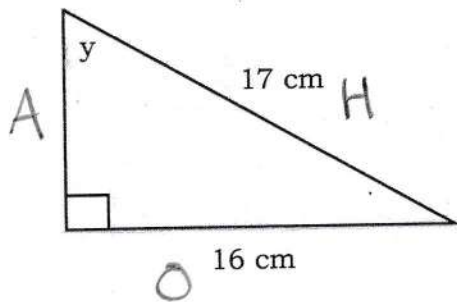
Find x to 2 decimal places.



$$T^{\circ} A$$

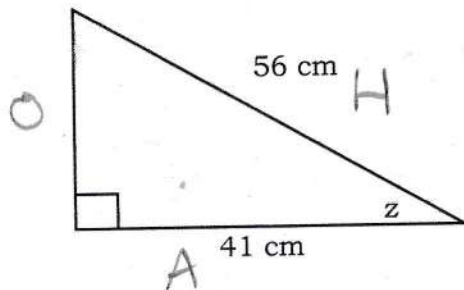
$$\begin{aligned} x &= \tan 29 \times 8.66 \\ &= 4.8003 \dots \\ &= \boxed{4.80 \text{ cm}} \end{aligned}$$

13.
Find y to the nearest degree.



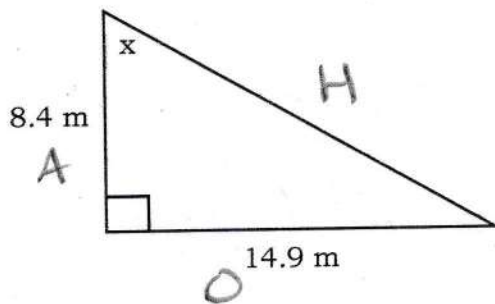
$$\begin{aligned} S^{\circ} H \\ \sin(y) &= \frac{16}{17} \\ y &= \sin^{-1}\left(\frac{16}{17}\right) \\ &= 70.25\dots \\ &= \boxed{70^{\circ}} \end{aligned}$$

14.
Find z to the nearest degree.



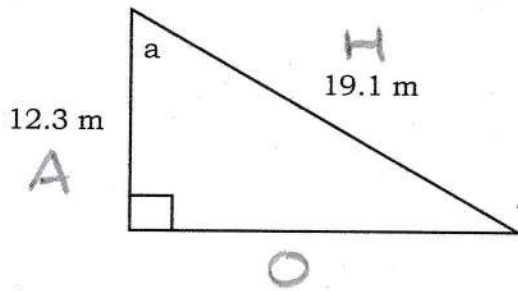
$$\begin{aligned} C^{\circ} A^{\circ} H \\ \cos(z) &= \frac{41}{56} \\ z &= \cos^{-1}\left(\frac{41}{56}\right) \\ &= 42.933\dots \\ &= \boxed{43^{\circ}} \end{aligned}$$

15.
Find x to 2 significant figures.



$$\begin{aligned} T^{\circ} A^{\circ} \\ \tan(x) &= \frac{14.9}{8.4} \\ x &= \tan^{-1}\left(\frac{14.9}{8.4}\right) \\ &= 60.58\dots \\ &= \boxed{61^{\circ}} \end{aligned}$$

16.
Find a to 2 significant figures.



$$C \quad A \quad H$$

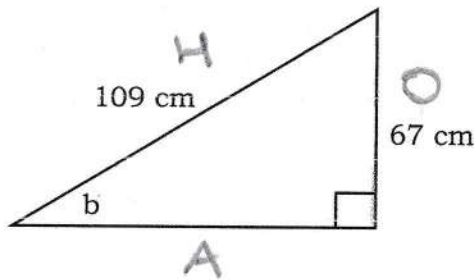
$$\cos(a) = \frac{12.3}{19.1}$$

$$a = \cos^{-1}\left(\frac{12.3}{19.1}\right)$$

$$= 49.910\dots$$

$$= \boxed{50^\circ}$$

17.
Find b to 1 decimal place.



$$S \quad O \quad H$$

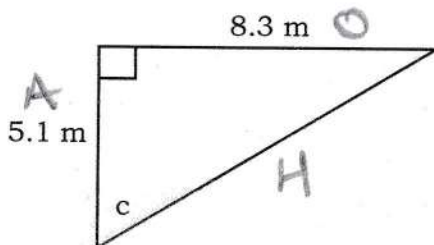
$$\sin(b) = \frac{67}{109}$$

$$b = \sin^{-1}\left(\frac{67}{109}\right)$$

$$= 37.928\dots$$

$$= \boxed{37.9^\circ}$$

18.
Find c to 1 decimal place.



$$T \quad O \quad A$$

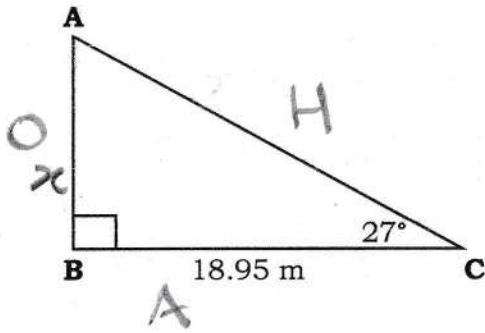
$$\tan(c) = \frac{8.3}{5.1}$$

$$c = \tan^{-1}\left(\frac{8.3}{5.1}\right)$$

$$= 58.431\dots$$

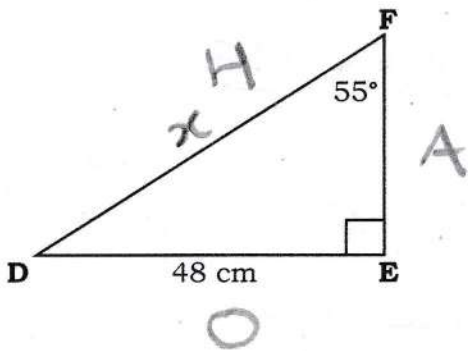
$$= \boxed{58.4^\circ}$$

19.
Find AB to 2 decimal places.



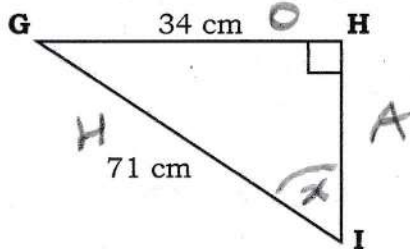
$$\begin{aligned}
 x &= \tan 27 \times 18.95 \\
 &= 9.6555\dots \\
 &= \boxed{9.66 \text{ m}}
 \end{aligned}$$

20.
Find DF to 2 significant figures.



$$\begin{aligned}
 x &= \frac{48}{\sin 55} \\
 &= 58.5971\dots \\
 &= \boxed{59 \text{ cm}}
 \end{aligned}$$

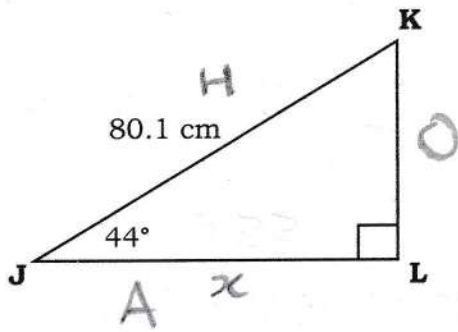
21.
Find the angle GIH to 2 significant figures.



$$\begin{aligned}
 \sin(x) &= \frac{34}{71} \\
 x &= \sin^{-1}\left(\frac{34}{71}\right) \\
 &= 28.611\dots \\
 &= \boxed{29^\circ}
 \end{aligned}$$

22.

Find JL to 3 significant figures.

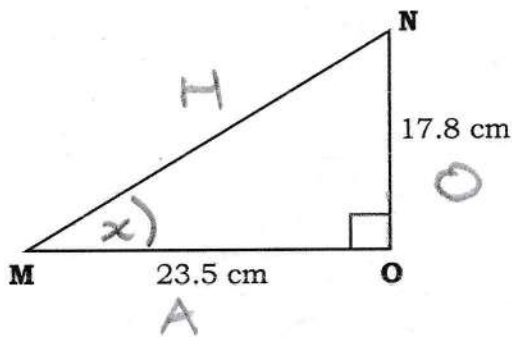


C A H

$$\begin{aligned}x &= \cos(44) \times 80.1 \\ &= 57.6191\dots \\ &= \boxed{57.6 \text{ cm}}\end{aligned}$$

23.

Find the angle NMO to 2 significant figures.

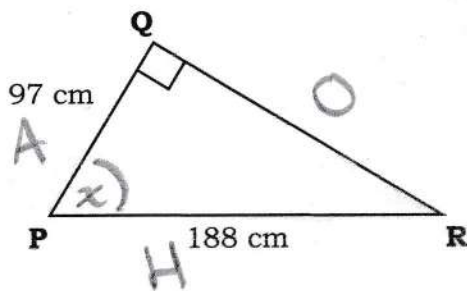


T O A

$$\begin{aligned}\tan(x) &= \frac{17.8}{23.5} \\ x &= \tan^{-1}\left(\frac{17.8}{23.5}\right) \\ &= 37.1419\dots \\ &= \boxed{37^\circ}\end{aligned}$$

24.

Find the angle QPR to 2 significant figures.

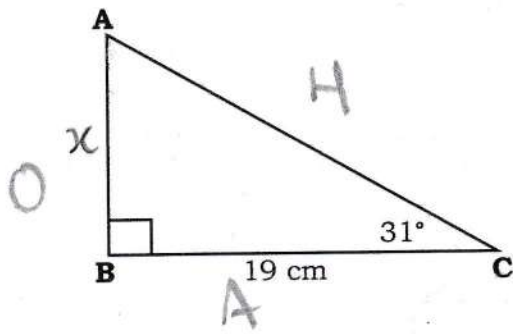


C A H

$$\begin{aligned}\cos(x) &= \frac{97}{188} \\ x &= \cos^{-1}\left(\frac{97}{188}\right) \\ &= 58.938\dots \\ &= \boxed{59^\circ}\end{aligned}$$

25.

Find the area of the triangle ABC, to the nearest square centimetre.

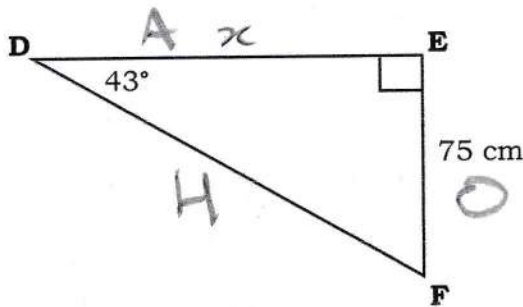


$$\begin{aligned} x &= \tan(31) \times 19 \\ &= 11.416 \dots \end{aligned}$$

$$\begin{aligned} \text{Area} &= \frac{x \times 19}{2} \\ &= 108.455 \dots \\ &= \boxed{108 \text{ cm}^2} \end{aligned}$$

26.

Find the area of the triangle DEF, to 3 significant figures.

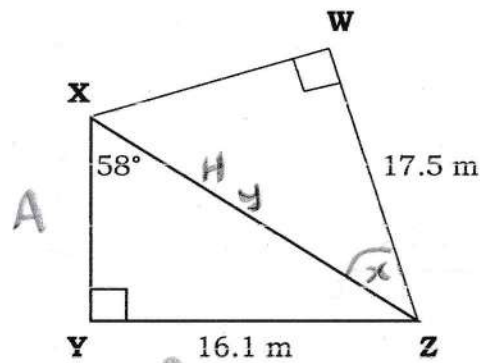


$$\begin{aligned} x &= \frac{75}{\tan 43} \\ &= 80.42 \dots \end{aligned}$$

$$\begin{aligned} \text{Area} &= \frac{x \times 75}{2} = 3016.03 \dots \\ &= \boxed{3020 \text{ cm}^2} \end{aligned}$$

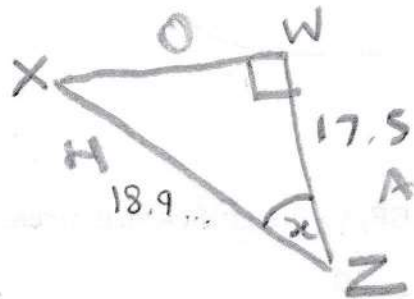
27.

Find the angle WZX to 2 significant figures.



First Find XZ:

$$XZ = \frac{16.1}{\sin 58}$$
$$= 18.984 \dots$$



Now find angle x:

$$\cos(x) = \frac{17.5}{18.9}$$
$$x = \cos^{-1}\left(\frac{17.5}{18.9}\right)$$
$$= 22.1916 \dots$$
$$= \boxed{22^\circ}$$