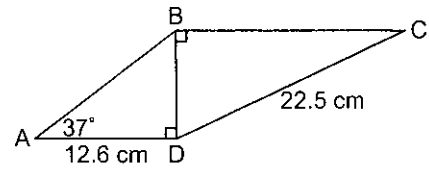
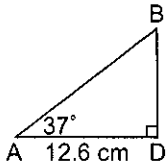


Practice

1. Find the measure of $\angle C$ to the nearest degree.

Use $\triangle ABD$ to find the length of BD .



Use the tangent ratio.

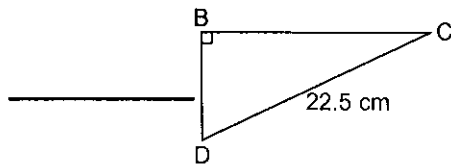
$$\tan A = \underline{\hspace{2cm}}$$

$$\tan A = \underline{\hspace{2cm}}$$

$$\tan \underline{\hspace{1cm}} = \underline{\hspace{2cm}}$$

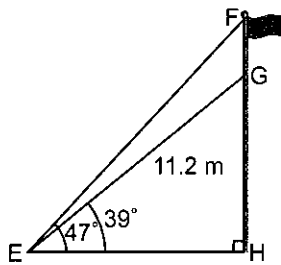
$$BD = \underline{\hspace{2cm}}$$

In $\triangle BCD$, use the _____ ratio to find $\angle C$.



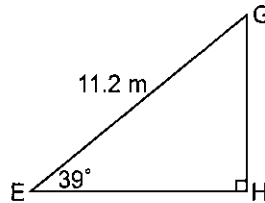
The measure of $\angle C$ is about _____.

2. Two guy wires support a flagpole, FH. The first wire is 11.2 m long and has an angle of inclination of 39° . The second wire has an angle of inclination of 47° . How tall is the flagpole to the nearest tenth of a metre?



Recall that the angle the wire makes with the ground is called the **angle of inclination**.

We want to find the length of FH.
Use $\triangle EGH$ to find the length of EH.
Use the cosine ratio.



Side EH is common to both triangles.

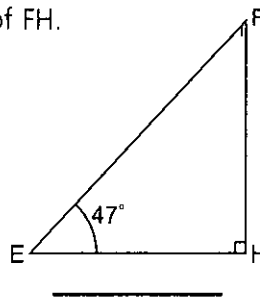
$\cos E =$ _____

$\cos E =$ _____

\cos _____ = _____

EH = _____

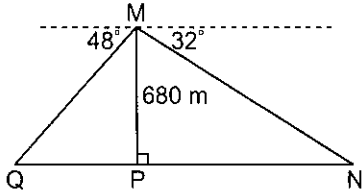
In $\triangle EFH$, use the _____ ratio to find the length of FH.



FH = _____

The flagpole is about _____ tall.

3. A mountain climber is on top of a mountain that is 680 m high. The angles of depression of two points on opposite sides of the mountain are 48° and 32° . How long would a tunnel be that runs between the two points? Give your answer to the nearest metre.



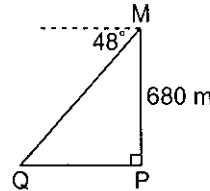
We want to find the length of QN.

The angle of depression of point Q is _____.

So, $\angle M$ in $\triangle PQM$ is: $90^\circ -$ _____, or _____.

Use $\triangle PQM$ to find the length of PQ.

Use the _____ ratio.



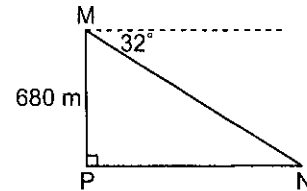
$$PQ = \underline{\hspace{2cm}}$$

The angle of depression of point N is _____.

So, $\angle M$ in $\triangle PMN$ is: $90^\circ -$ _____, or _____.

Use $\triangle PMN$ to find the length of PN.

Use the _____ ratio.



$$NP = \underline{\hspace{2cm}}$$

The length of the tunnel is: _____ = _____ + _____

$$QN = \underline{\hspace{2cm}}$$

The tunnel would be about _____ long.