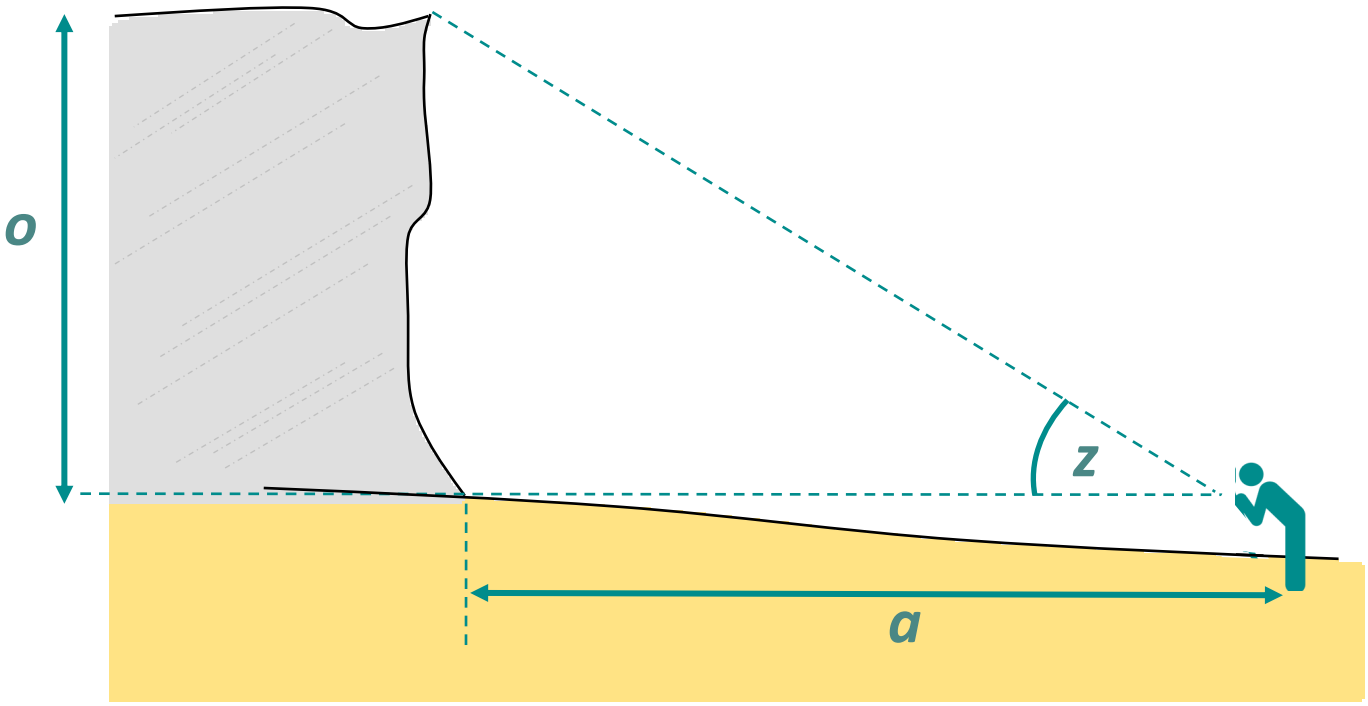
Measuring the height of a feature

The following method can be used to measure the height of a cliff, a tree or a building.



Height (o) of a feature can be measured using a clinometer.

First, the recorder positions themselves so that the clinometer is able to view the base of the feature at a 0° angle. If the ground is flat the recorder may have to lie down on their stomach to achieve this. In the case of a cliff next to a beach, the beach is likely to slope away from the cliff foot which will allow the recorder to stand.

At this point the recorder needs to mark their position and then measure the distance from this mark to the foot of the feature (*a*).

Returning to their marked position, the recorder then measures the angle between themselves and the top of the feature (*z*) by pointing the clinometer at the highest visible point of the feature.

The height can then be calculated by using trigonometry:

Height (*o*) = Distance (*a*) x TAN angle *z*

Worked Example: A recorder measures the angle of the cliff as 57° at a distance of 35m from the foot of the cliff.

Height = 35 x TAN 57

Height = 35 x 1.558 Therefore the height of the cliff = 54.53m

Remember: If the base distance (a) is measured in metres, the final calculation will give a result in metres.