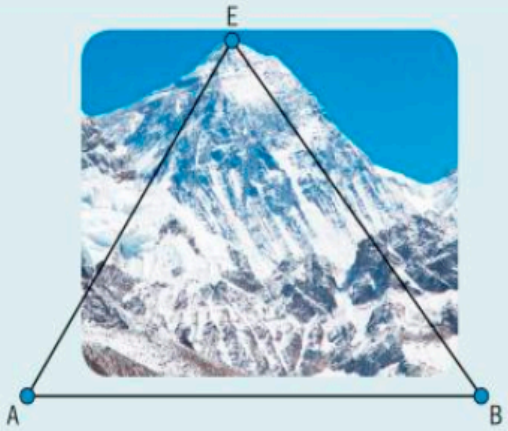
Developing inquiry skills

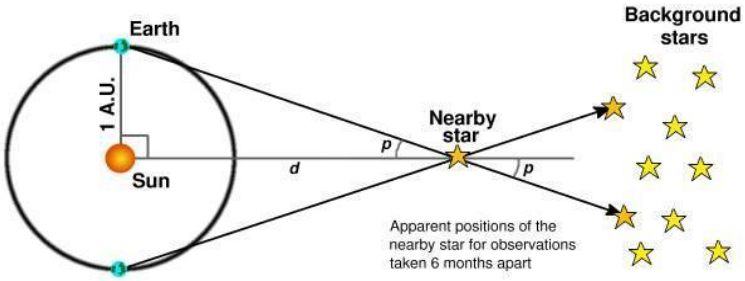
Look again at the opening problem. The Great Trigonometric Survey used an instrument called a theodolite to measure the angles from points A and B to the summit E.

$B\hat{A}E = 30.5°$ and $A\hat{B}E = 26.2°$.

Points A and B are 33 km apart.

Find the height of Mount Everest to the nearest metre.





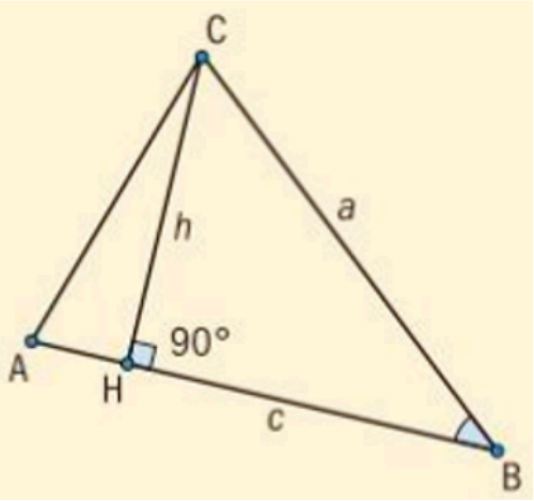
Show that when a star A has parallax angle $\hat{P} = 1°$, the distance from the Sun to A is about 57 AU, rounded to the nearest integer.

Show that when the parallax angle $\hat{P} = 45°$, the distance from the Sun to the star A is 1 AU.

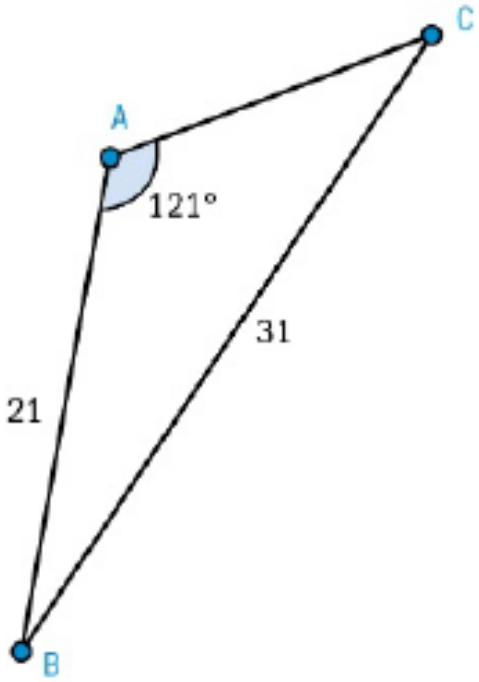
A star A has a parallax angle of $1 \times 10^{-4}°$. Find the distance of the star to the Earth. Give your answer to the nearest thousand AU.

Area of a Triangle:

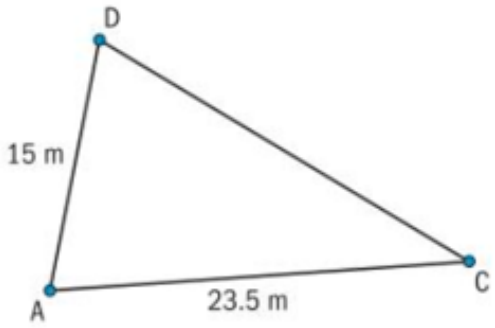
In terms of an angle:



Find the area of
the given triangle.



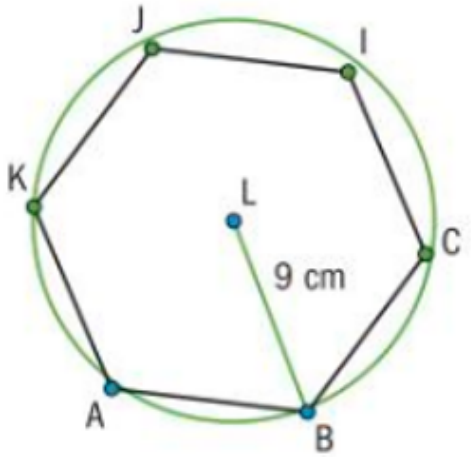
A gardener leaves a triangular plot of his garden for a plant nursery. The two sides of the triangular plot are AC = 23.5 m and AD = 15 m.



a If DC = 29 m, find the area of the plot designated for the plant nursery.

b 0.5 kg of herb seeds will cover an area of 150 m^2. Determine the mass of seeds, in kg, needed to plant the plot with herbs.

A regular hexagon is inscribed in a circle with radius 9 cm. Find the area of the hexagon.

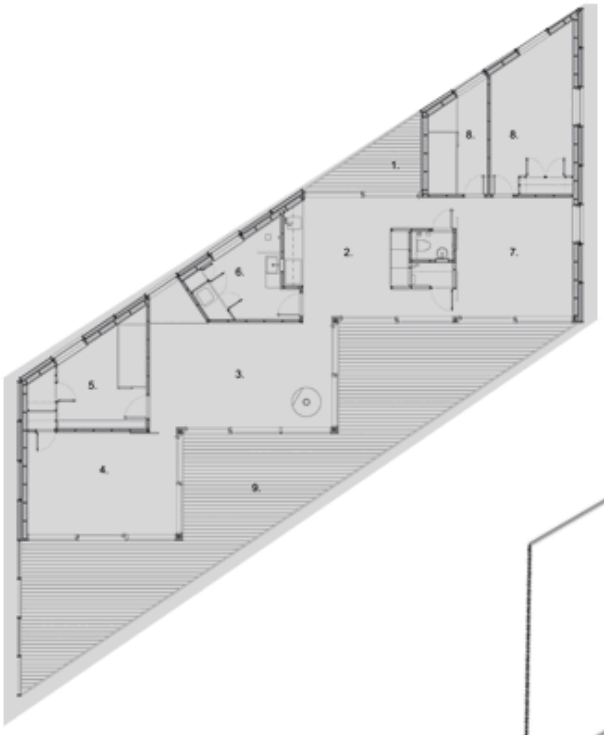


Which home is a Better Value?

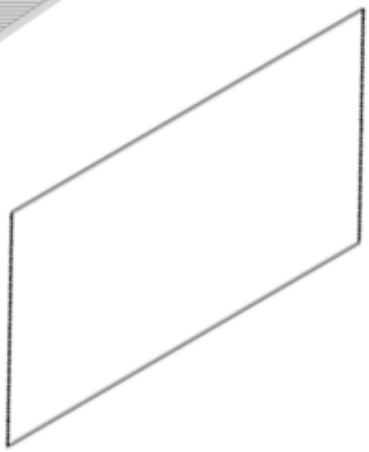
When considering apartments or homes to buy, one major trait that can help in the comparison of one place to another is the price per square meter. For each dwelling below, find the cost/square meter.

Scale: 1 centimeter = 1.7 meters

Total Cost: 615,000 euro

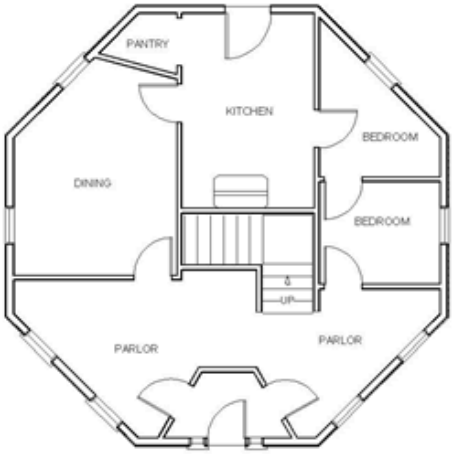


Measure two consecutive sides and an included angle. Use the simple parallelogram below to show your work.



Scale: 1 centimeter = 1.1 meters

Total Cost: 639,000 euro
(2 floors)



Measure one side only,...
Use the simple octagon
below to show your work.