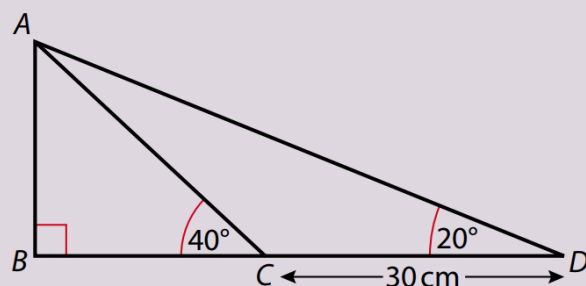
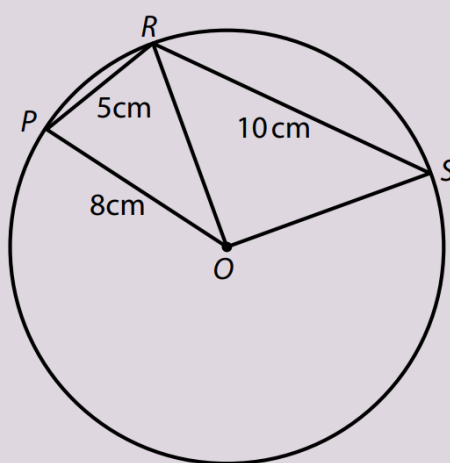


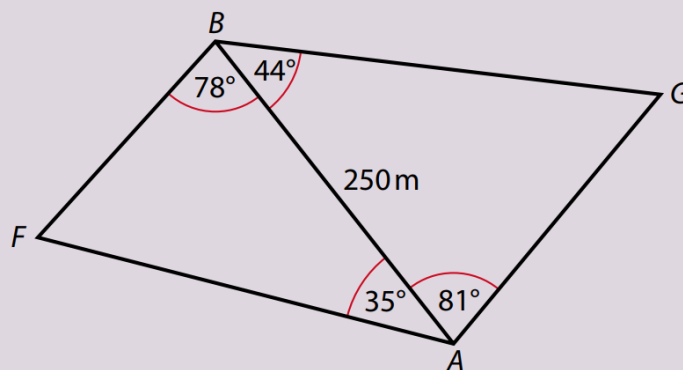
11 Calculate AB given $CD = 30$ cm, and the angle measures given in the diagram.



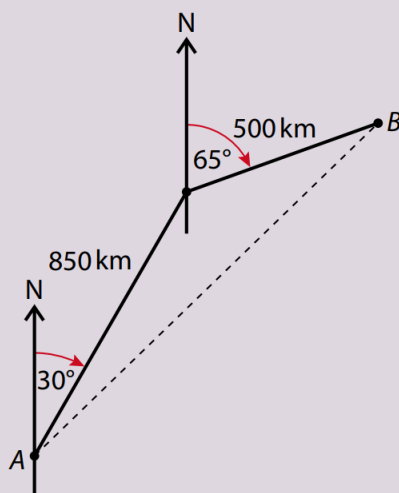
12 The circle with centre O and radius of 8 cm has two chords PR and RS , such that $PR = 5$ cm and $RS = 10$ cm. Find each of the angles \widehat{PRO} and \widehat{RSO} , and then calculate the area of the triangle PRS .



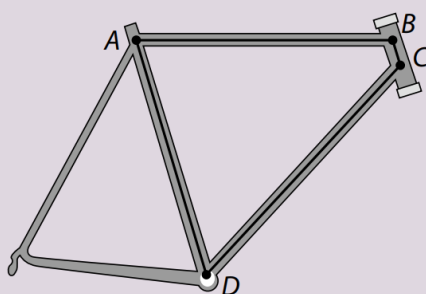
13 A forester was conducting a survey of a tropical jungle that was mostly inaccessible on foot. The points F and G indicate the location of two rare trees. To find the distance between points F and G , a line AB of length 250 m is measured out so that F and G are on opposite sides of AB . The angles between the line segment AB and the line of sight from each endpoint of AB to each tree are measured, and are shown in the diagram. Calculate the distance between F and G .



- 14** Calculate the distance between the tips of the hands of a large clock on a building at 10 o'clock if the minute hand is 3 m long and the hour hand is 2.25 m long.
- 15** An airplane takes off from point A . It flies 850 km on a bearing of 030° . It then changes direction to a bearing of 065° and flies a further 500 km and lands at point B .
- What is the straight line distance from A to B ?
 - What is the bearing from A to B ?



- 16** The traditional bicycle frame consists of tubes connected together in the shape of a triangle and a quadrilateral (four-sided polygon). In the diagram, AB , BC , CD and AD represent the four tubes of the quadrilateral section of the frame. A frame maker has prepared three tubes such that $AD = 53$ cm, $AB = 55$ cm and $BC = 11$ cm. If $\hat{DAB} = 76^\circ$ and $\hat{ABC} = 97^\circ$, what must be the length of tube CD ? Give your answer to the nearest tenth of a centimetre.



- 11** $AB \approx 19.3$ cm
- 12** $\hat{PRO} \approx 71.8^\circ$, $\hat{SRO} \approx 51.3^\circ$, area ≈ 20.9 cm²
- 13** 406.1 metres **14** 2.70 metres
- 15** a) 1291.8 km b) 42.8°
- 16** 59.5 cm