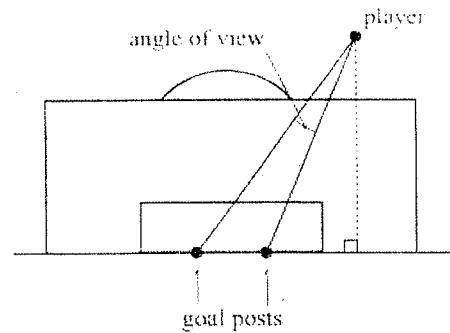
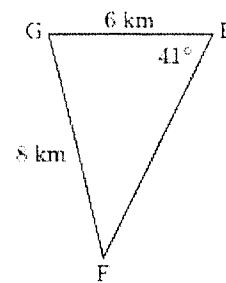


- 4 Two yachts P and Q are anchored at different locations at sea. A beacon at B determines that P and Q are 24 km and 21 km away respectively. The yacht at Q measures B and P to be 53° apart. What angle would the yacht at P measure between B and Q?
- 5 A football goal is 5 metres wide. When a player is 26 metres from one goal post and 23 metres from the other, he shoots for goal. What is the angle of view of the goals that the player sees?



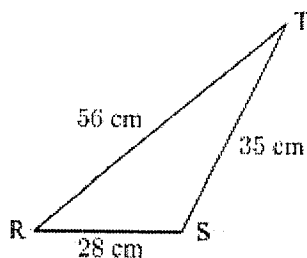
- 6 A tower 42 metres high stands on top of a hill. From a point some distance from the base of the hill, the angle of elevation to the top of the tower is 13.2° and the angle of elevation to the bottom of the tower is 8.3° . Find the height of the hill.
- 7 A large property needs to be sprayed with insecticide prior to being used for agriculture. An incomplete sketch of the property is shown.

- Calculate angle EFG.
- Determine the cost of spraying the property if insecticide costs £400 per square kilometre.



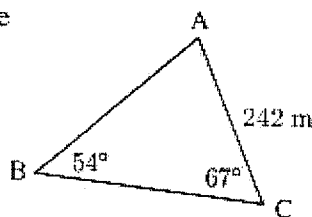
6 Triangle LMN has area 184 mm^2 , angle $\widehat{LMN} = 20^\circ$, and MN is 34 mm long. Find the length of LM.

7 Find the measure of angle RST.

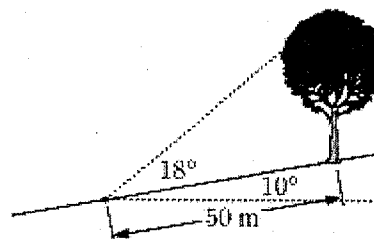


8 Jason's sketch of his father's triangular vegetable patch is shown alongside. Find:

- a the length of the fence AB.
- b the area of the patch in hectares.



9 A vertical tree is growing on the side of a hill with gradient 10° to the horizontal. From a point 50 m downhill from the tree, the angle of elevation to the top of the tree is 18° . Find the height of the tree.

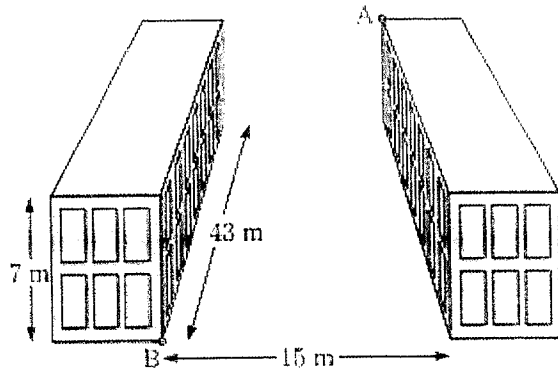


10 Find the measure of:

- a angle D in triangle DEF if $d = 35 \text{ m}$, $e = 40 \text{ m}$, and $\widehat{DEF} = 61^\circ$
- b angle J in triangle IJK if $i = 5.9 \text{ cm}$, $j = 8.2 \text{ cm}$, and $\widehat{JK} = 37^\circ$.

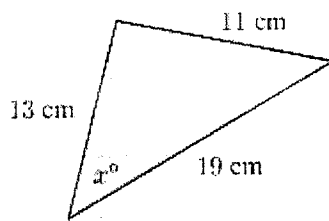
Sine rule	$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$
Cosine rule	$a^2 = b^2 + c^2 - 2bc \cos A; \quad \cos A = \frac{b^2 + c^2 - a^2}{2bc}$
Area of a triangle	$A = \frac{1}{2} ab \sin C$, where a and b are adjacent sides, C is the included angle

- 6 Two identical buildings stand opposite each other, as shown alongside. Find the angle of depression from A to B.

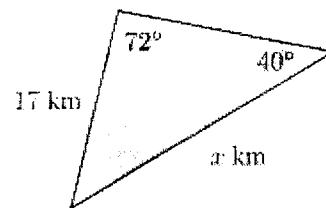


- 7 Determine the value of x :

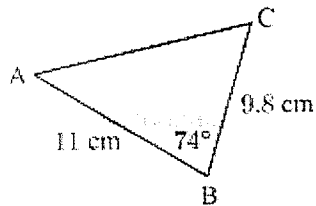
a



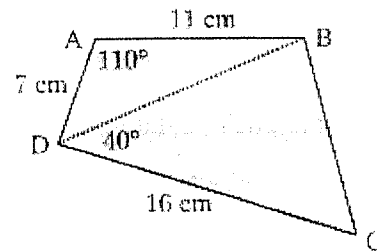
b



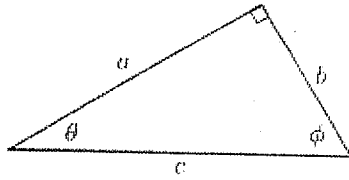
- 8 Find the unknown side and angles:



- 9 Find the area of quadrilateral ABCD:



1

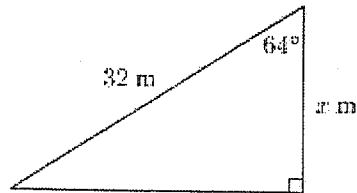


For the triangle alongside, find:

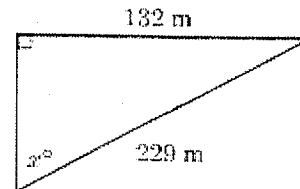
- a the hypotenuse
- b the side adjacent to ϕ
- c $\sin \theta$
- d $\tan \phi$

2 Find the value of x :

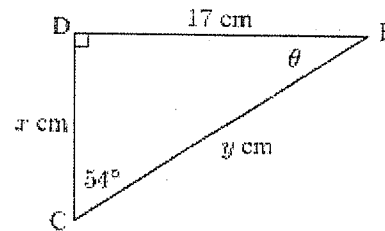
a



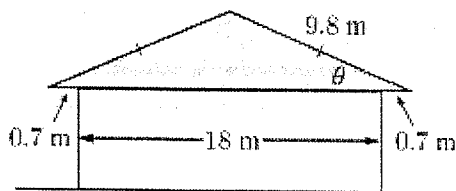
b



3 Find the measure of all unknown sides and angles in triangle CDE:



4 Find θ , the pitch of the roof.



5 Determine the area of the triangle:

