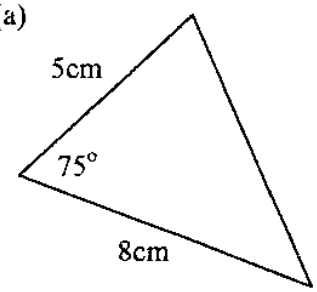
1.1 CALCULATING the AREA of a TRIANGLE using TRIGONOMETRY

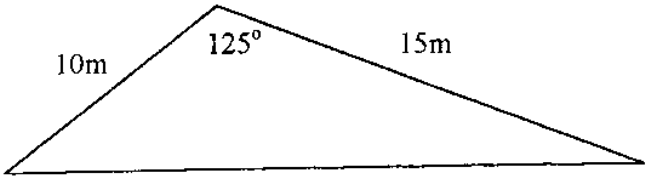
The area of a triangle : $A = \frac{1}{2}ab\sin C$

1. Use trigonometry to calculate the area of each triangle below.

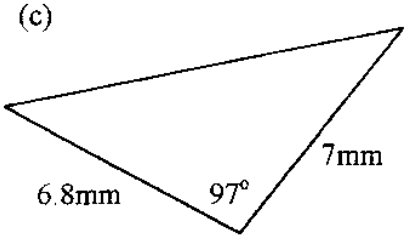
(a)



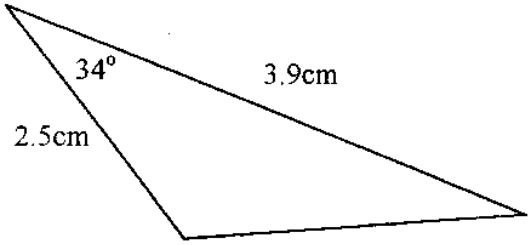
(b)



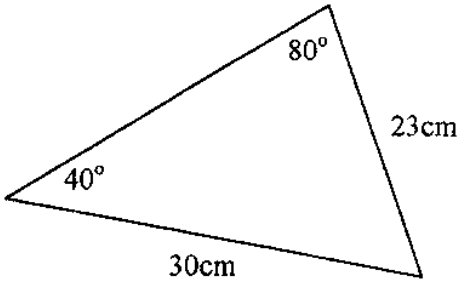
(c)



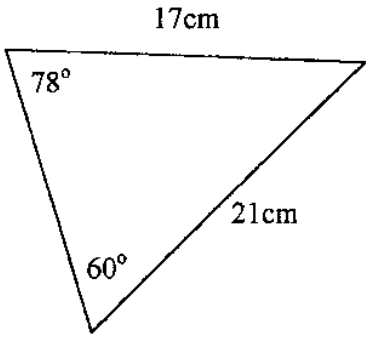
(d)



(e)

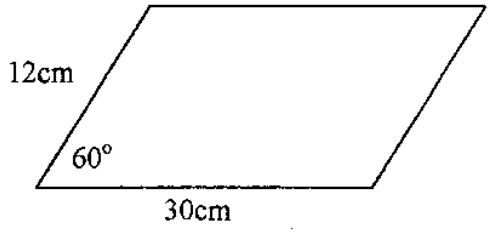


(f)

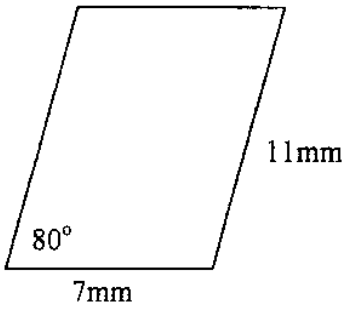


2. Calculate the area of each parallelogram below.

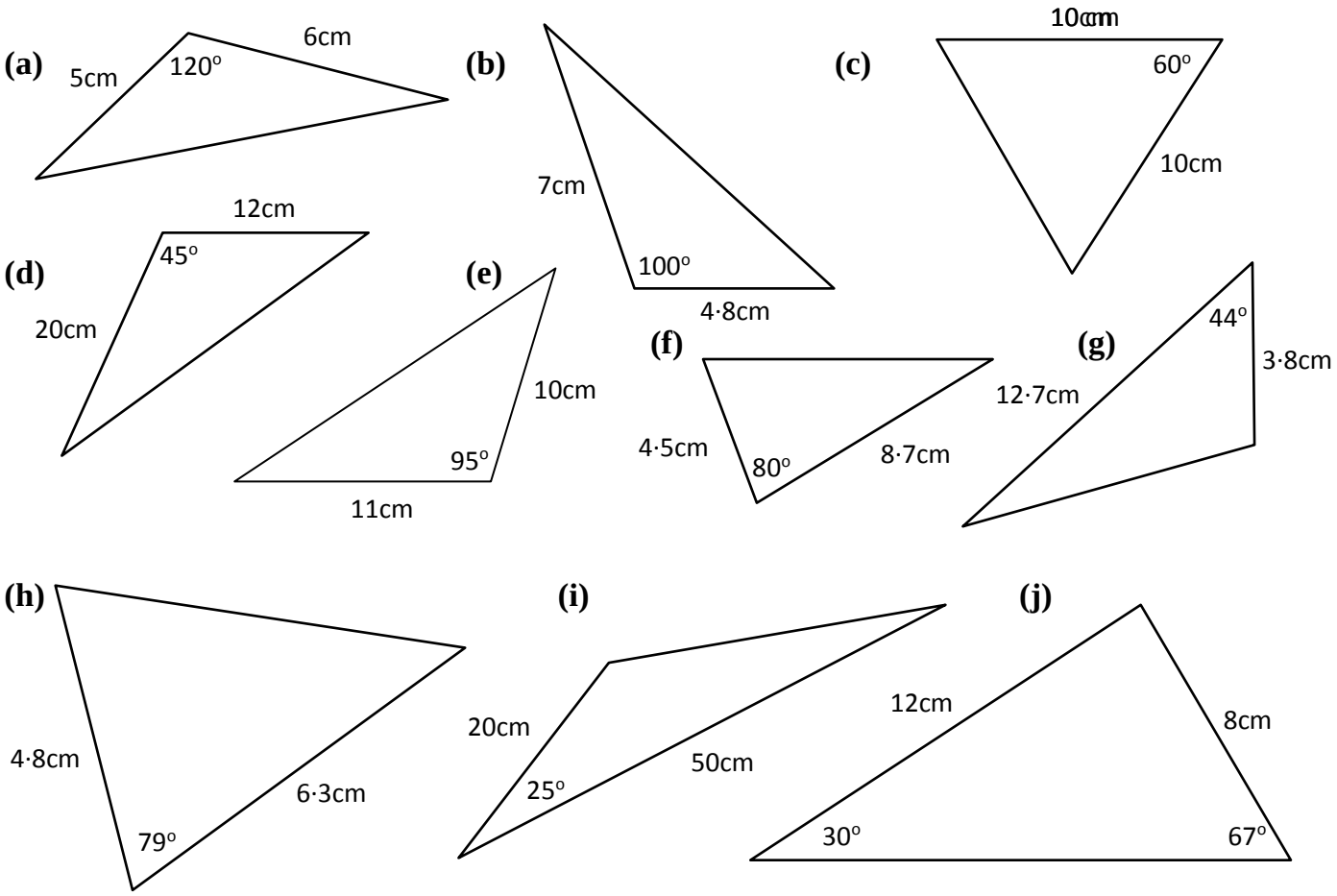
(a)



(b)



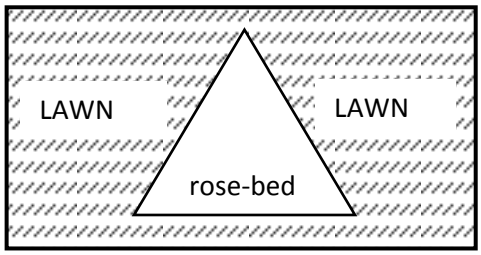
3. Find the area of the following triangles :



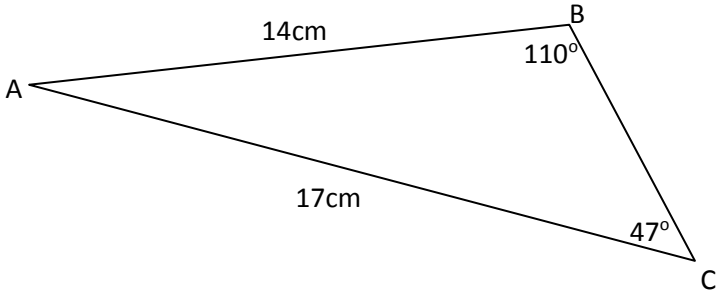
4. Mr. Fields is planting a rose-bed in his garden.

It is to be in the shape of an **equilateral** triangle of side 2m.

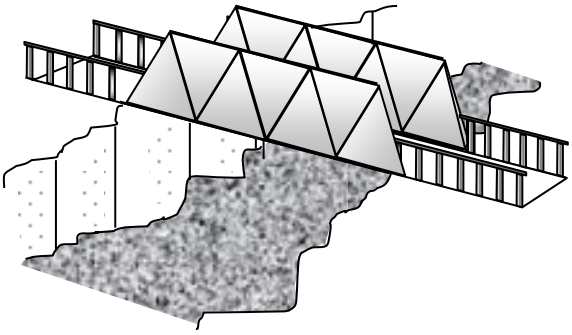
What area of lawn will he need to remove to plant his rose-bed?



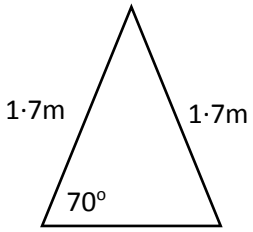
5. Calculate the area of triangle ABC where AB = 14cm, AC = 17cm, $\angle ABC = 110^o$ and $\angle BCA = 47^o$.



6. For safety reasons the sides of a footbridge are to be covered with triangular panels.



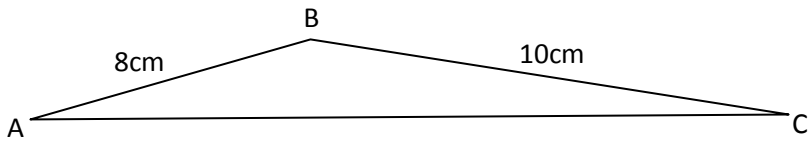
Each panel is an isosceles triangle as shown.



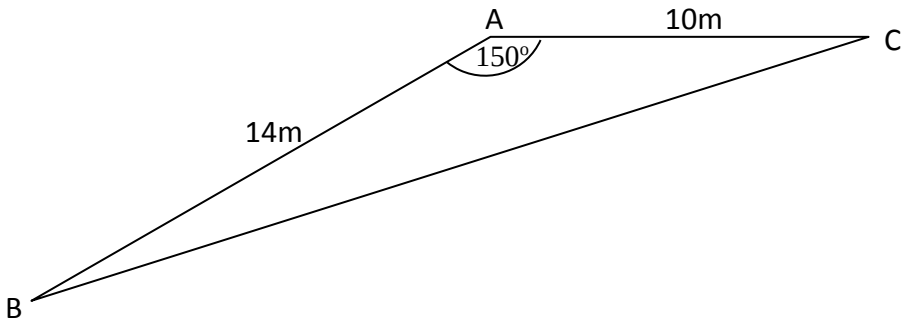
(a) Find the area of each panel.

(b) If there are 7 panels on each side of the bridge, find the total area of material required to cover the bridge.

7. Given that the area of this triangle is $20cm^2$, calculate the size of the **obtuse** angle ABC.



8. In triangle ABC, AB = 14m and AC = 10m. Angle BAC = 150°.



Given that sin 150° = 0·5, calculate the area of triangle ABC.

9. The area of a triangular flag is $429·5cm^2$.

Calculate the size of the obtuse angle ABC.