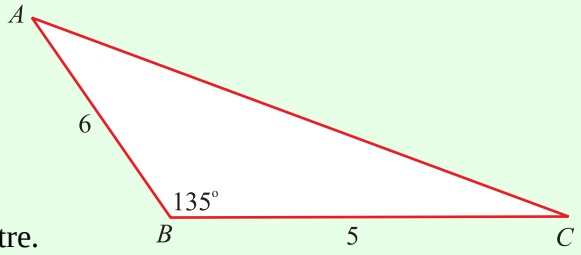
TRIGONOMETRY (Q 5, PAPER 2)

2010

5 (a) In the triangle ABC,
$|AB| = 6$ cm, $|BC| = 5$ cm
and $|\angle ABC| = 135^\circ$.

Calculate the area of the triangle,
correct to the nearest square centimetre.



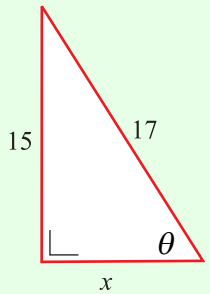
(b) Consider the right-angled triangle shown in the diagram.

(i) Find the value of x.

(ii) Write down, as a fraction, the value of $\sin\theta$.

(iii) Write down, as a fraction, the value of $\cos\theta$.

(iv) Find the value of $\sin 2\theta$.

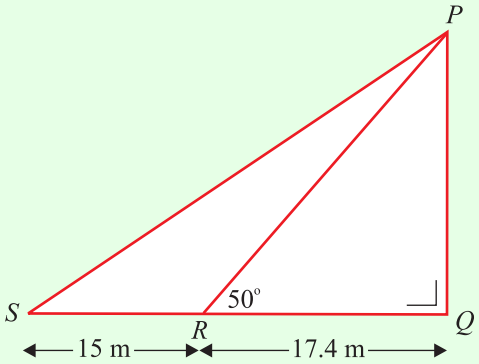


(c) A vertical mast $[PQ]$ is supported by two straight cables $[PS]$ and $[PR]$, as shown.

The cables are joined to level ground at S and R where $|SR| = 15$ m, $|RQ| = 17.4$ m and $|\angle PRQ| = 50^\circ$.

(i) Find $|PR|$, correct to the nearest metre.

(ii) Find $|PS|$, correct to the nearest metre.



ANSWERS

5 (a) 11 cm^2

(b) (i) 8 (ii) $\frac{15}{17}$ (iii) $\frac{8}{17}$ (iv) $\frac{240}{289}$

(c) (i) 27 m (ii) 38 m