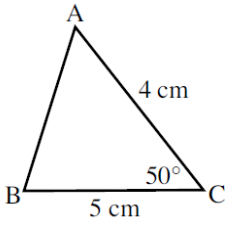
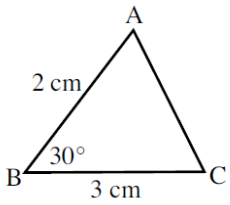
QUESTION 1 Find the area of each of the following triangles correct to one decimal place.

a

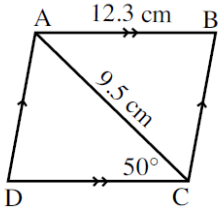


b

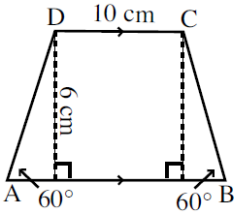


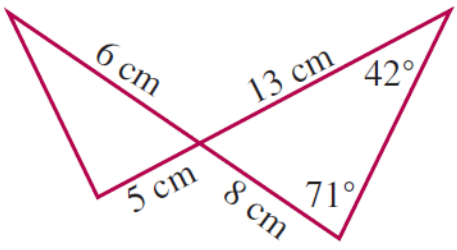
QUESTION 3

a Find the area of the parallelogram ABCD.

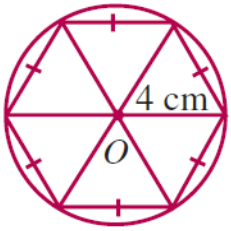


b Find the area of the trapezium ABCD.



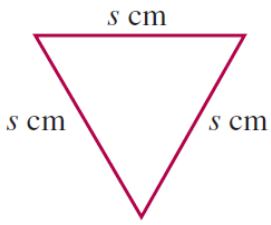


Find the total area of this figure, correct to the nearest cm^2.



A regular hexagon has been inscribed in a circle with centre O and radius 4 cm. Find the area of the hexagon, without the use of a calculator.

Show, by trigonometry, that the area of an equilateral triangle of side s cm is given by the formula $A = \frac{\sqrt{3}}{4}s^2$.



Prove the identities:

$\csc\theta \sec\theta = \frac{1}{\sin\theta\cos\theta}$	$\csc\theta \tan\theta = \frac{1}{\cos\theta}$
$\sec\theta + \csc\theta = \frac{\sin\theta+\cos\theta}{\sin\theta\cos\theta}$	$\sec\theta - \cos\theta = \frac{\sin^2\theta}{\cos\theta}$
$(1-\sin\theta)(1+\sin\theta) = (\cos\theta)^2$	$\frac{1+\cot\theta}{1+\tan\theta} = \cot\theta$

Prove the identities:

$(1 + \tan^2\theta)\cos^2\theta = 1$	$\cos^2\theta - \sin^2\theta = 1 - 2\sin^2\theta$
$\tan^2\theta\cos^2\theta + \cot^2\theta\sin^2\theta = 1$	$3\cos^2\theta - 2 = 1 - 3\sin^2\theta$
$\frac{1}{\sec\varphi - \tan\varphi} - \frac{1}{\sec\varphi + \tan\varphi} = 2\tan\varphi$	$\frac{1}{1 + \sin\varphi} + \frac{1}{1-\sin\varphi} = 2\sec^2\varphi$