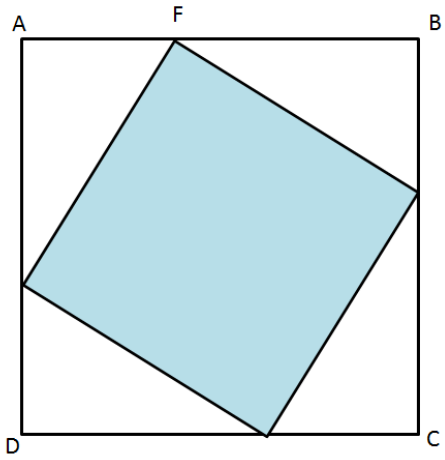
Questions solved using Pythagoras' theorem

1)

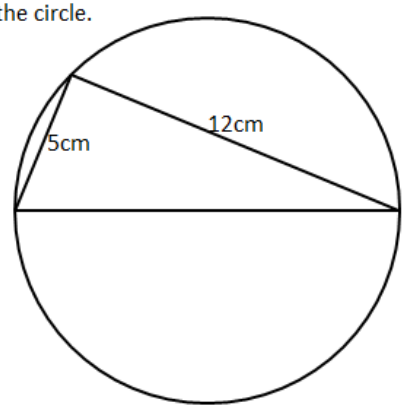


The diagram shows a blue square contained inside a larger square.
AF:FC is in the ratio 3:4.
The distance AF is 21cm.
What proportion of the square ABCD is shaded blue?

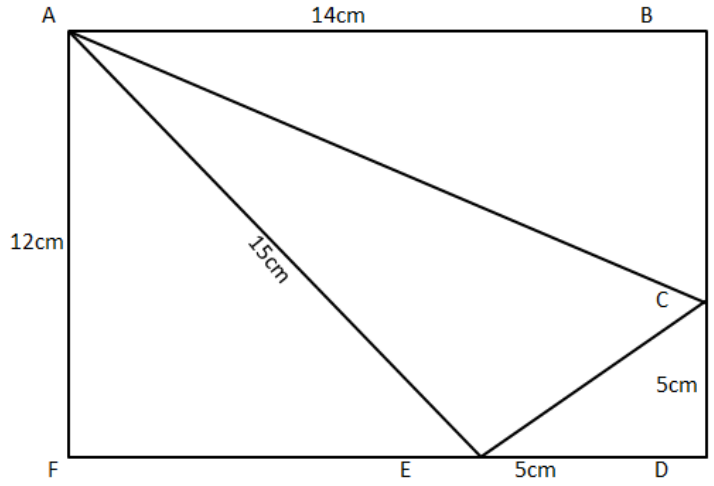
2)

The diagram shows a triangle contained within a circle.
The line AB is the diameter of the circle.

Find the area of the circle.
Give reasons for your answer.

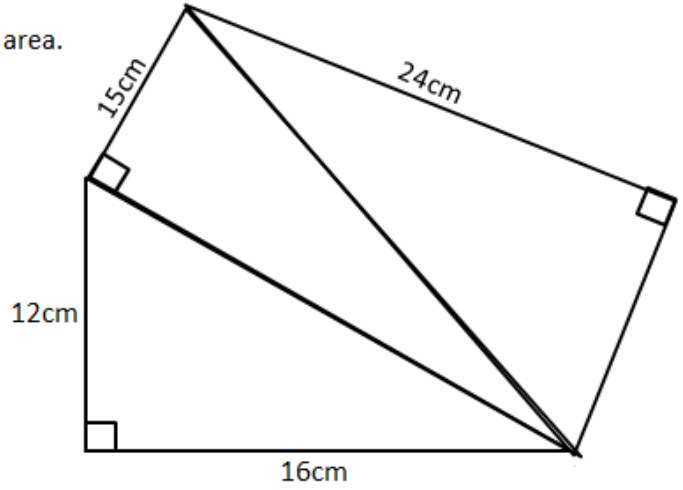


3) The diagram shows a triangle drawn inside a rectangle.
Is triangle ACE a right angled triangle?
You must show your working and give reasons for your answer.



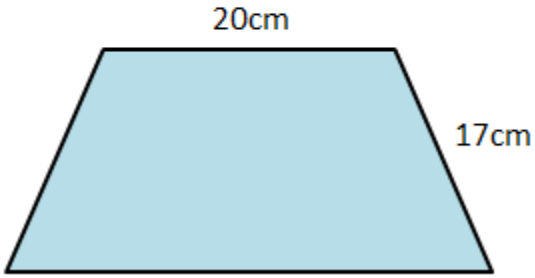
4) a) Find the perimeter of the outside of this shape.

b) Find the area.

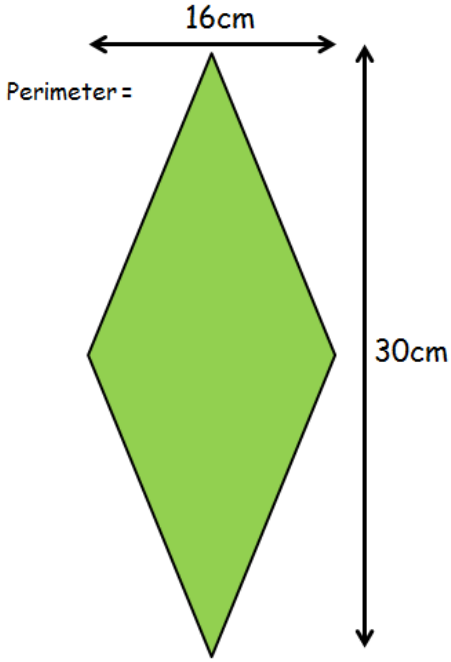


5) The shape below is an isosceles trapezium.
It has a perimeter of 90cm.

Find the area of the trapezium.



6)



7) Two planes leave the airport at the same time.
Plane A leaves the airport on a bearing of 042° and travels at a speed of 420km/h.
Plane B leaves the airport on a bearing of 132° and travels at a speed of 540km/h.

If the planes continue on a straight path, how far apart will they be after 90 minutes from take off?

8) Three squares are enclosed within one another. The area of the blue square is $529cm^2$
What is the area of the green square?