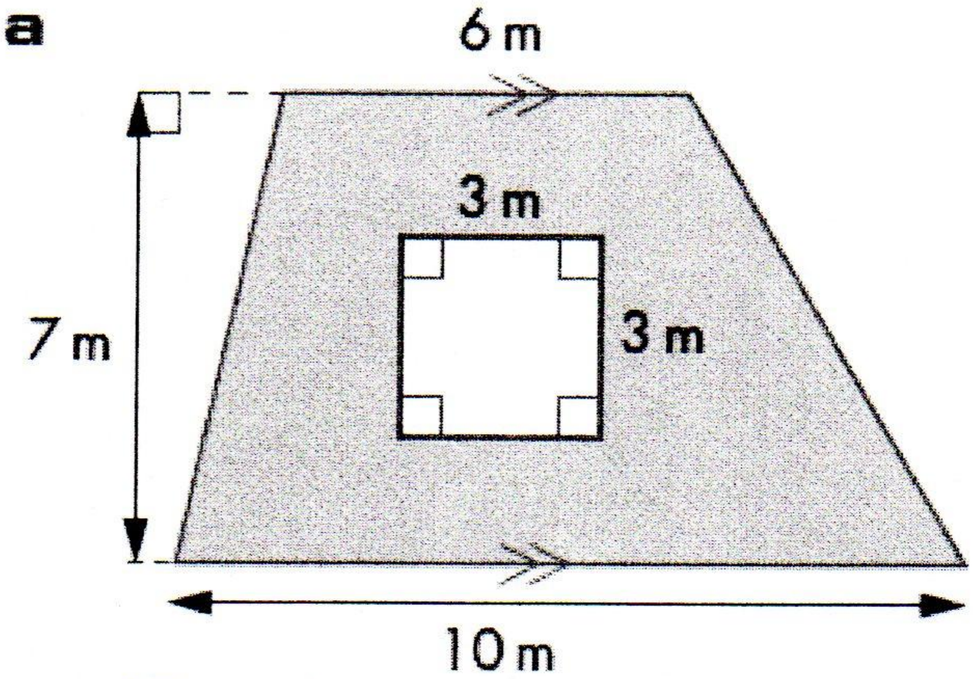
Trapezium

The area of trapezium is given by ½ (a+b) h

Q1.Calculate the area of the shaded part in each of these diagrams.

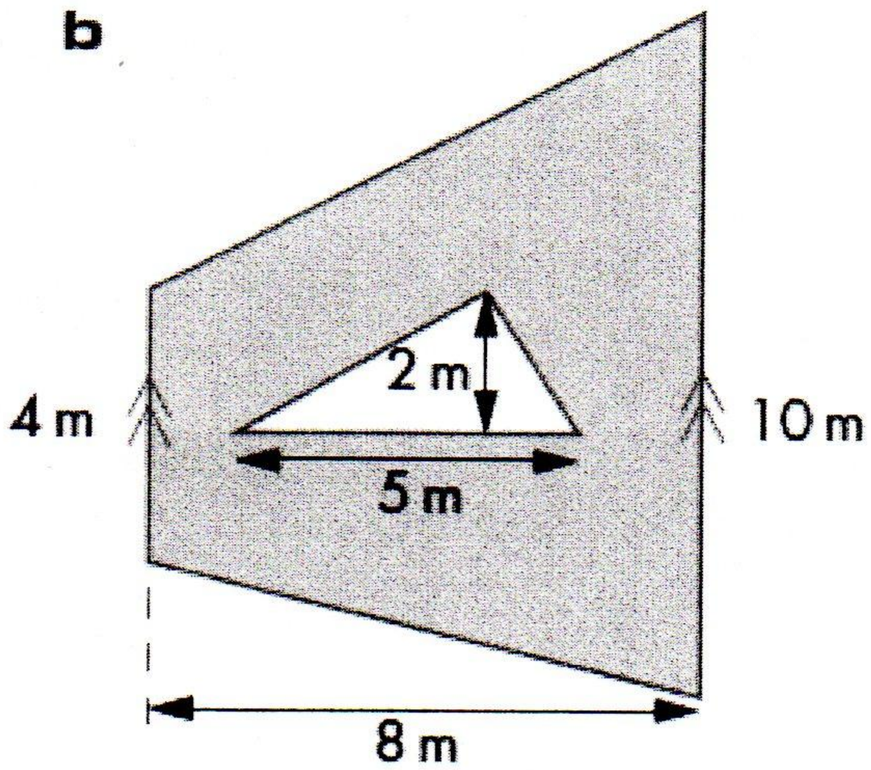
Where ‘a’ and ‘b’ are two parallel lines and ‘h’ is the vertical height.

a



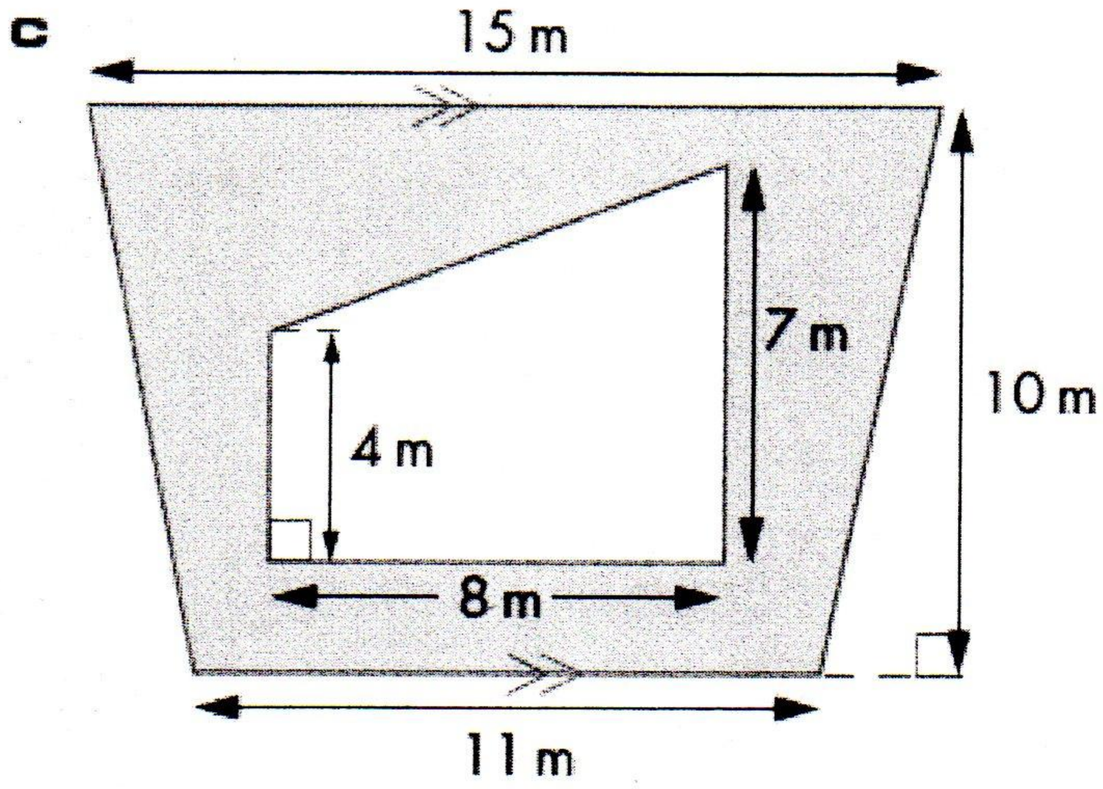
Area of Trapezium=.....
Area of square =.....
Area of shaded part

b



Area of Trapezium=.....
Area of triangle
Area of shaded part

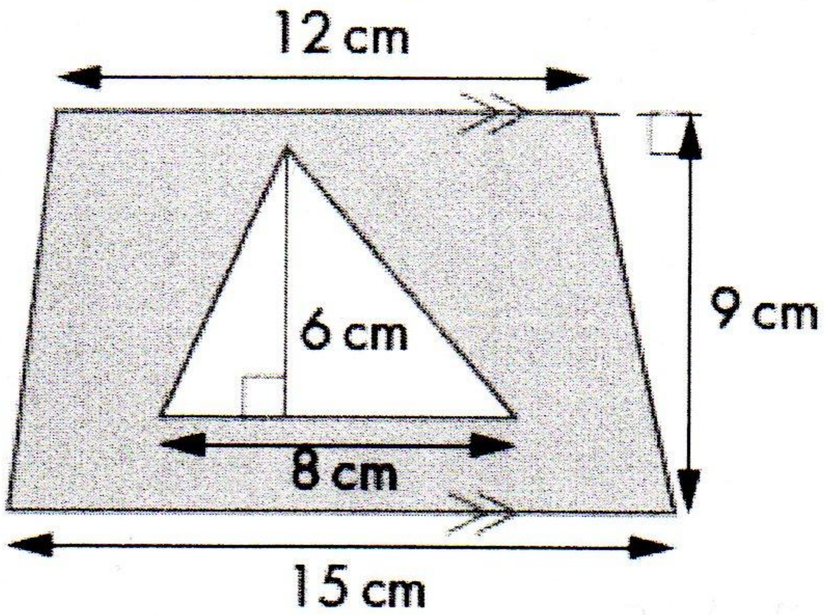
c



Area of big Trapezium=.....
Area of small trapezium
Area of shaded part

Q2. A trapezium has an area of 25 cm^2. Its vertical height is 5 cm. Write down five different possible pairs of lengths which the two parallel sides could be.

Q3. What percentage of this shape has been shaded?



Area of Trapezium =.....

Area of triangle =.....

Area of shaded part =.....

Q4. PQRS is a trapezium.
PQ is parallel to *SR*.

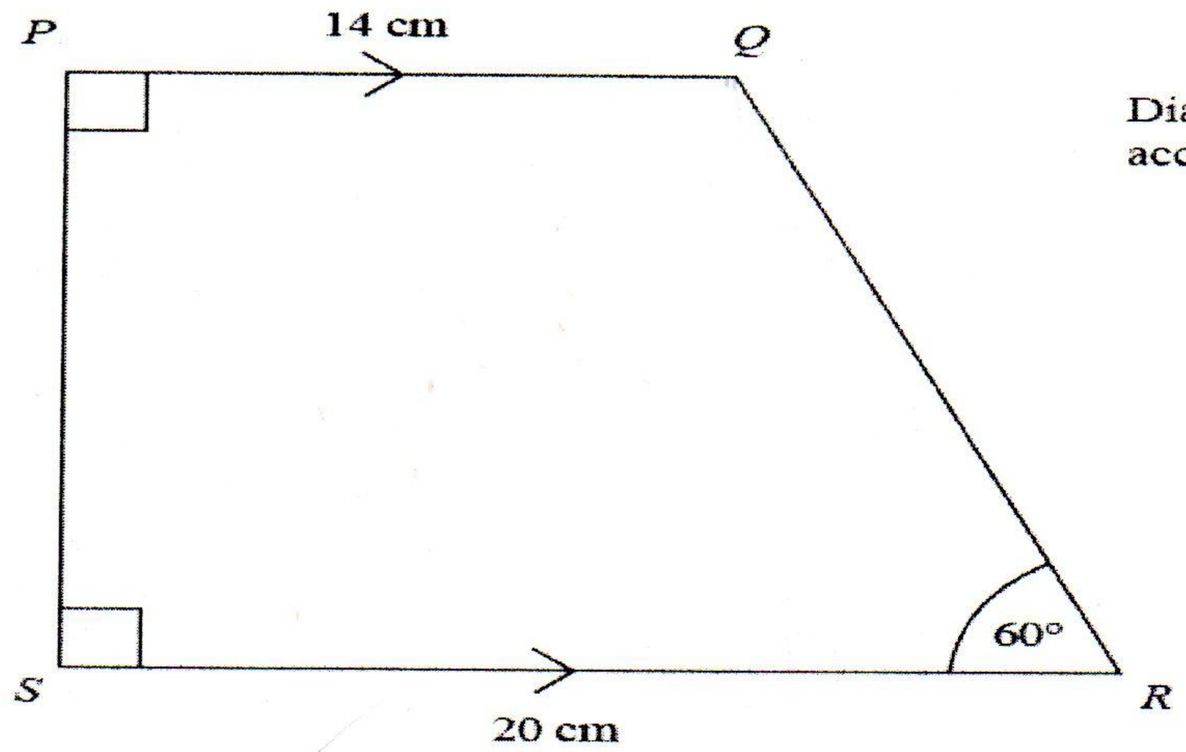


Diagram **NOT** accurately drawn

Angle *SPQ* = angle *PSR* = 90°.
Angle *QRS* = 60°.
PQ = 14 cm.
SR = 20 cm.
Work out the area of the trapezium.
Give your answer correct to 3 significant figures.

Q5.The diagram shows a garden with a pond.
The garden is in the shape of a triangle.
The pond is in the shape of a rectangle.

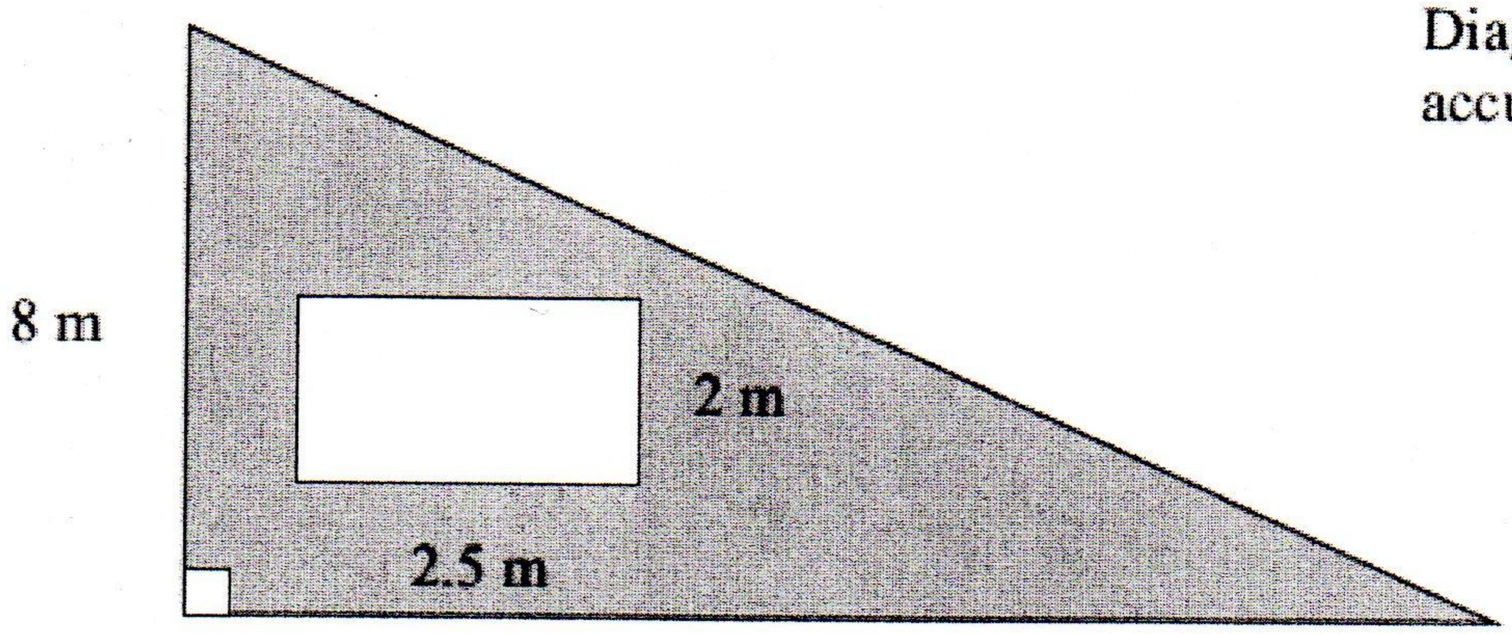
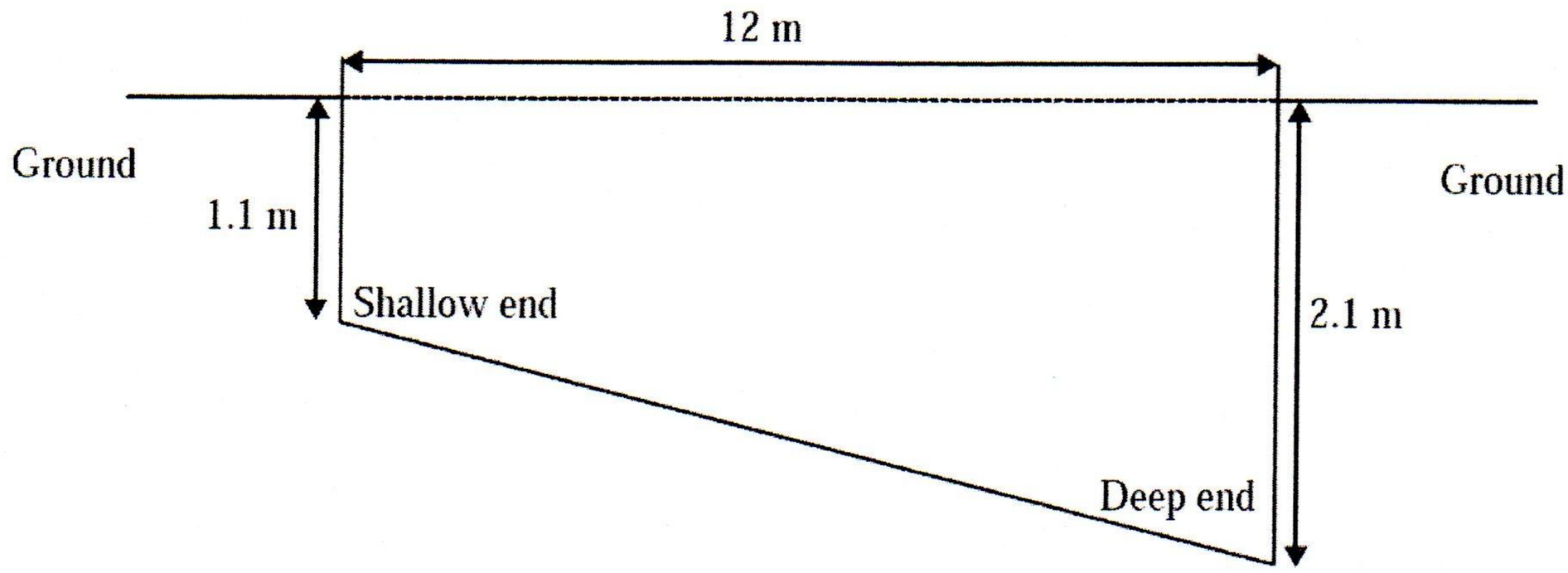


Diagram **NOT** accurately drawn

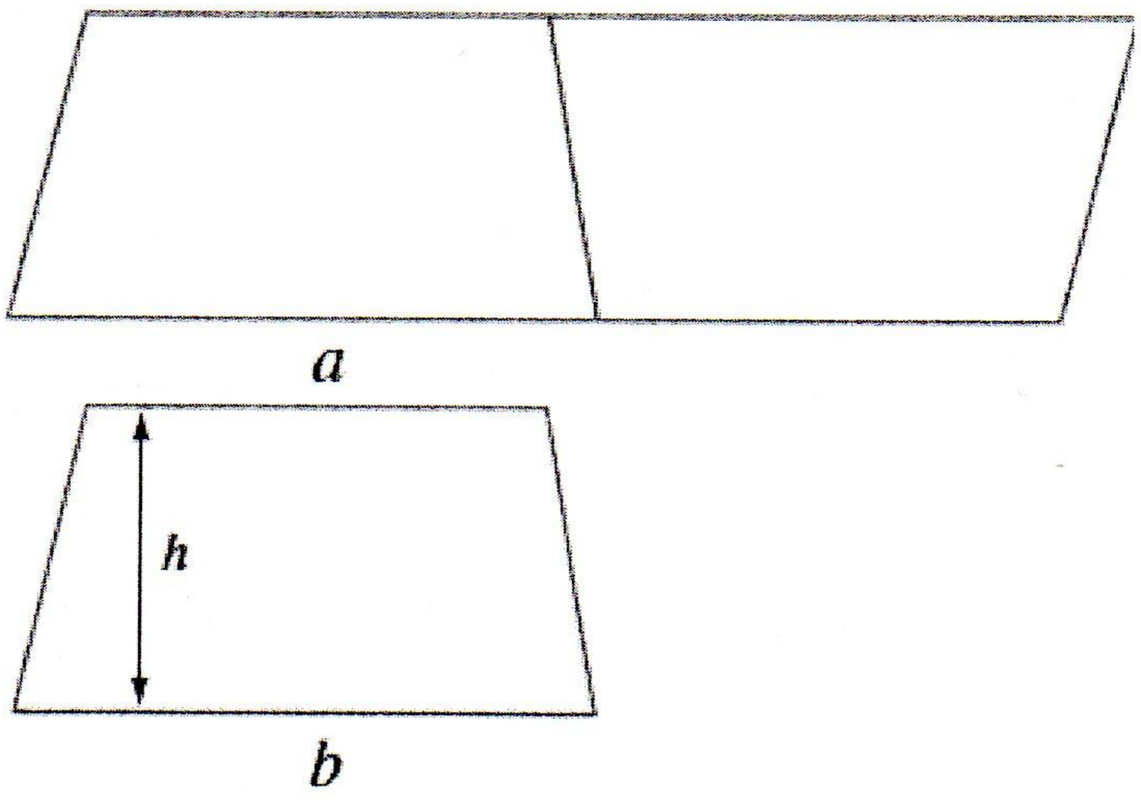
Jim is going to cover the shaded region with gravel.
45 kg of gravel is needed to cover 1 m^2.
How much gravel does Jim need?
..... kg

Q6. The diagram shows a cross-section of Rafa's new swimming pool.

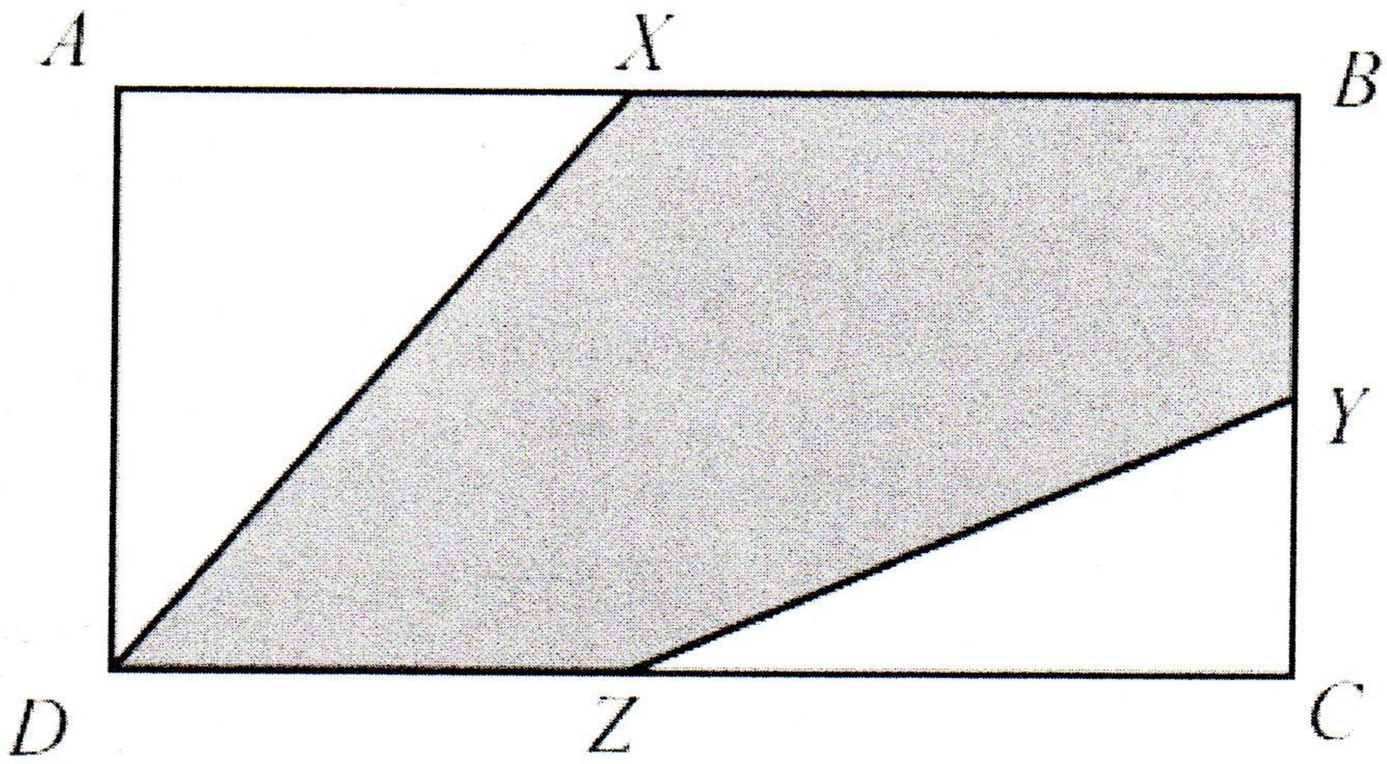


Q7. The swimming pool has two identical sides in the shape of a trapezium.
All other sides are rectangular.
The length of the pool is 12 m.
The width of the pool is 4 m.
The depth of the pool is 2.1 m at the deep end and 1.1 m at the shallow end.
Rafa fills the pool up with water from a hosepipe.
The surface of the water is to be 10 cm from the top of the pool.
Rafa turns on the hosepipe at 09 00 on Monday and water fills at a rate of 200 ml per second.
When the pool is full, Rafa turns off the tap. At what time will this be?
Show your working.

Q8. A trapezium has parallel sides of a and b with a perpendicular height h.
The trapezium is rotated by 180° and two trapezia are put together as shown.



Q9.Use the diagram to prove that the area of a trapezium is $^1/_2h(a + b)$



ABCD is a rectangle.

X is the midpoint of *AB*.

Y is the midpoint of *BC*.

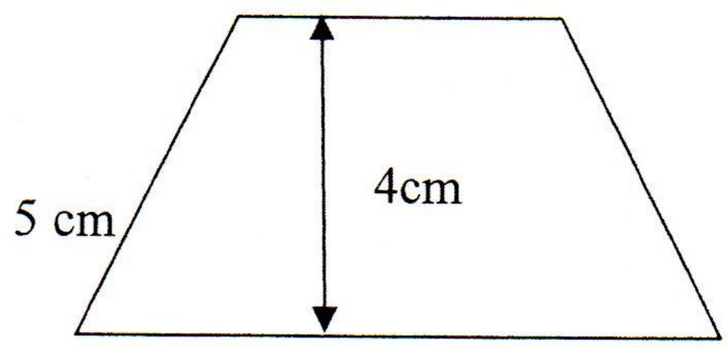
Z is the midpoint of *CD*.

What fraction of the total area of *ABCD* is shaded?

Show clearly how you get your answer.

.....

Q10. Find the area of the given trapezium.



Area=.....