Area of 2 semi circles (1 circle)
--> πr^2
= π x 7.5cm x 7.5 cm
= 176.71cm^2

Area of whole figure
--> 30cm x 30cm
= 900cm^2

Shaded area
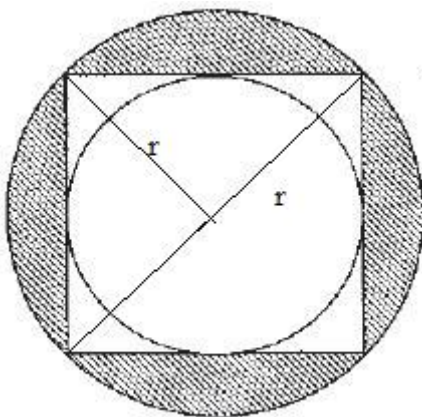--> 900cm^2 - 353.43cm^2 - 176.71cm^2
= 369.86cm^2

Answer: 369.86cm^2

The figure below is made up of a big circle, square and a small circle. The area of the square is 400 square cm. Find the area of the shaded region. (Correct your answer to 2 decimal places)
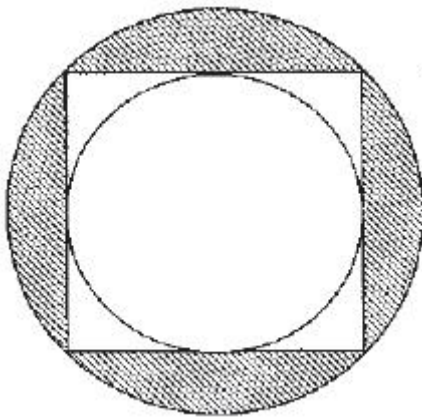
Solution

Area of square --> 400 square cm
Length of square --> 20 cm (square root of 400 sq cm)

Area of 1/4 square
--> 400 square cm divided by 4
= 100 square cm

Area of one right-angle triangle -->(1/2)(b)(h)
100 square cm = (1/2)(r)(r)
(r)(r) = (100 square cm) x 2 = 200 square cm

Area of circle = (3.14)(r)(r)
=(3.14)(200 square cm)
= 628 square cm

Shaded area -->(628 - 400) square cm
= 228 square cm
= 228.00 square cm (correct to 2 decimal places)

Answer: 228.00 square cm

The figure below is made up of a square and a rectangle. The perimeter of the figure is 178 cm and the area of the square, PQRS, is 784 square cm. What is the length of ST?
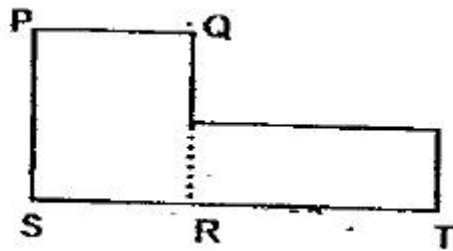
Solution

Square root of 784 square cm = 28 cm (length of 1 side of square)
2 lengths of rectangle --> (178 - 28 - 28 - 28 - 28) cm = 66 cm
1 length --> 66 cm divided by 2 = 33 cm
ST --> 33 cm + 28 cm = 61 cm

Answer: 61 cm

The length of a rectangle is thrice as long as its width. Its perimeter is 16p cm.
a) Find the length of the rectangle in terms of p.
b) Find the area of the rectangle if p = 4.

Solution

Perimeter
--> 3 units + 1 unit + 3 units + 1 unit
= 8 units

8 units --> 16p cm
1 unit --> 16p cm divided 8 = 2p cm

a)
Length
3 units --> 3 x 2p cm = 6p cm

Answer: 6p cm

b)
Breadth of rectangle
1 unit → 2p cm

Area of rectangle
→ 6p cm x 2p cm
= $12p^2$ cm^2

If p = 4

$12(4)^2$ cm^2
= 12(16) cm^2
= 192 cm^2

Answer: 192 square cm

The figure below shows a rectangle PQRS. The lines are extended from point P, Q, R and S and they meet at point Y. The length of QR is 20 cm and the length of XY is 4 cm. Given that QS is a straight line, the area of Triangle PQY is 72 square cm and the area of Triangle SRY is 84 square cm, find the shaded area of Triangle QSY.
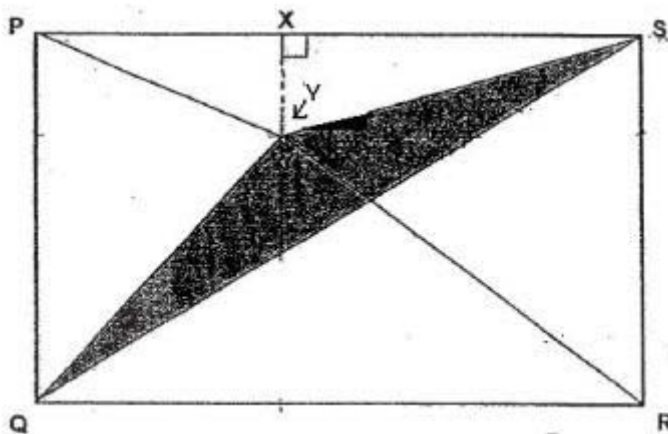
Solution

Area of Triangle PQY + Area of Triangle SRY
72 sq cm + 84 sq cm = 156 square cm

Area covered by Triangles PQY and SRY is also 1/2 of area of Rectangle PQRS. This also means that Area of Triangle PQS is also 156 sq cm.
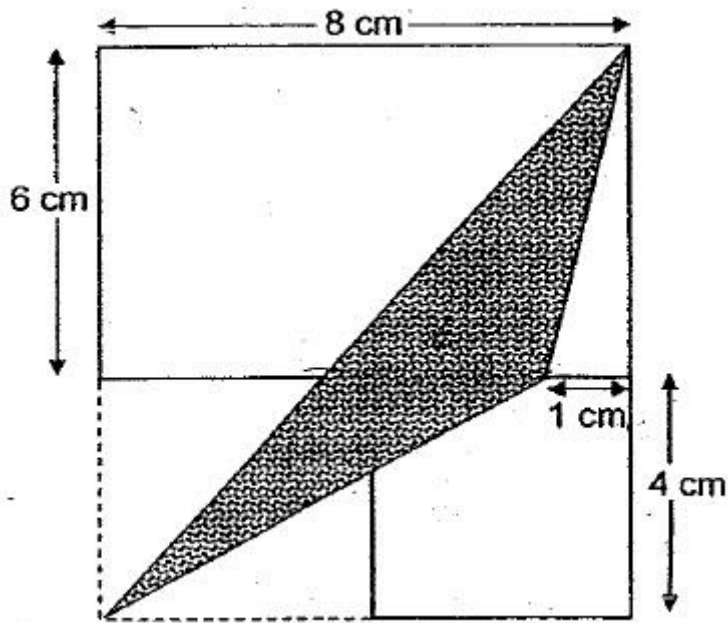
Area of Triangle PSY = 1/2 x 20 cm x 4 cm = 40 sq cm

Area of Triangle PQY = 72 sq cm
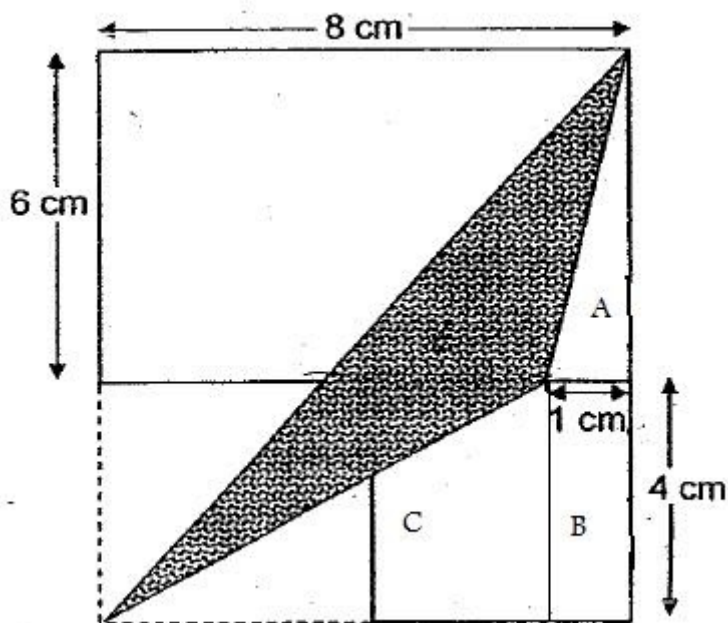
Shaded area
Area of PQS – Area of PQY – Area of PSY
=156 sq cm - 72 sq cm - 40 sq cm= 44 square cm

Answer: 44 square cm

The figure below is made up of a rectangle, square and a shaded triangle. Find the area of the shaded triangle.
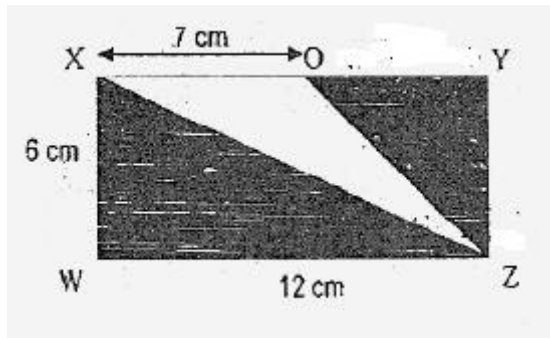

Solution

Area of Triangle A ----- ½ x 1cm x 6 cm = 3 square cm
Area of Rectangle B ----- 4cm x 1cm = 4 square cm
Area of Triangle C ----- ½ x 7cm x 4cm = 14 square cm

Area of A + B + C + shaded triangle -----
½ x 8cm x 10cm = 40 square cm

Area of shaded triangle -----
(40 – 14 – 4 – 3) square cm = **19 square cm (Answer)**

WXYZ is a rectangle. Find the area of the shaded part.

Solution

Area of rectangle ---- 12 cm x 6 cm = 72 square cm

Area of unshaded triangle ----
½ x base x height
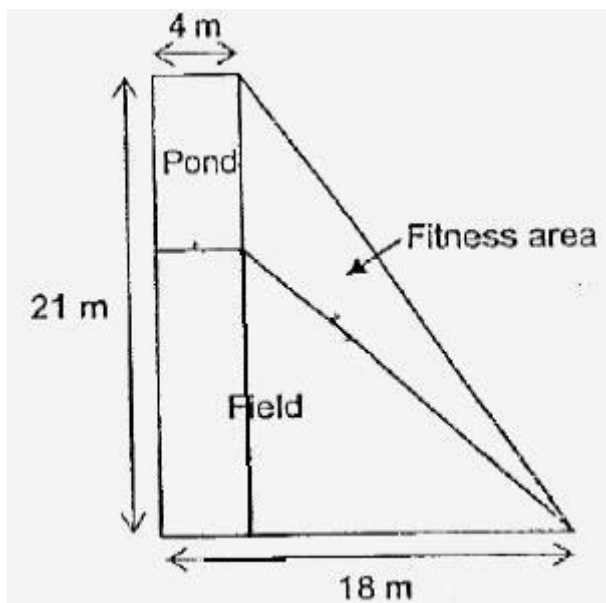= ½ x 7 cm x 6 cm = 21 square cm

Area of shaded part -----
(72 – 21) square cm= **51 square cm (Answer)**

he figure below shows a park which is made up of a triangular fitness area, a rectangular pond and a field in the shape of a trapezium. The length of the pond is twice its breadth.

a) The cost of fencing material is $3 per meter. How much will it cost to fence up the pond?
b) What is the area of the park?

Solution

a)
Length of pond ----- 2 x 4 m = 8 m
Perimeter of pond ----- 2 x (8 + 4) m = 24 m

1 m ----- $3
24 m ----- $3 x 24 = $72