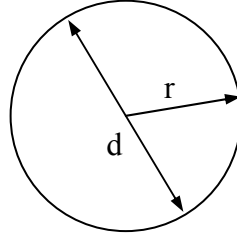


# Circles Worksheet (Area)

1. The following circle has diameter,  $d$ , and radius,  $r$



(Round answers to 2 decimal places and take  $\pi$  to be 3.142)

Find the area of the circle when the radius is:

- a. 6cm   b. 8.4cm   c. 70.21m

Find the area of the circle when the diameter is:

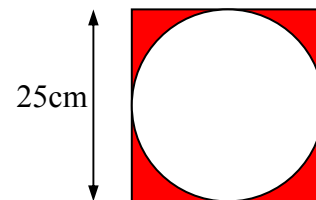
- d. 9cm   e. 4.2cm   f. 35.7m

Find the radius of the circle when the area is:

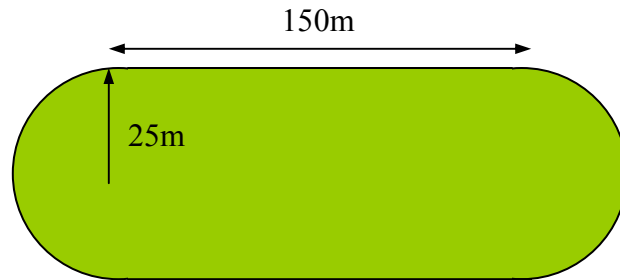
- g.  $500\text{cm}^2$    h.  $250\text{cm}^2$

2. A circular pond has a diameter of 110cm. Find the area of the pond
3. A flat, semi-circular protractor has a radius of 5cm, find the area of plastic needed to make it. If the thickness of plastic is 3mm, find the volume of plastic needed
4. John has a square of side 25cm, what is the area of the largest circle that he can draw inside the square?

What is the total area of the red section?



5. The following is an athletics track. The two straights are 150m, and the curved sections both have a radius of 25m. The inside of the track, the green area, is to be covered in grass for use in other athletics events.



- What is the total area of grass needed?
  - The grass costs £1.40 per square metre, what is the total cost of the grass?
6. Find the area of a quarter-circle of radius 9cm
7. A window has the shape below, with a semicircular top section and a square base.
- Find the area of glass used in this window
  - The window maker says the area of the semi-circular part of the glass should be a maximum of  $0.2 \text{ m}^2$  for safety reasons. What is the maximum diameter that the semi-circle can be?
  - Is the window with dimensions below safe?

