



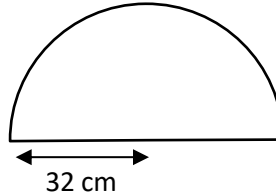
## PERIMETER OF A SEMI-CIRCLE PROBLEMS 2B

Working out

- 1) A semicircular window has a radius of 32 cm.

What is the perimeter of the window?

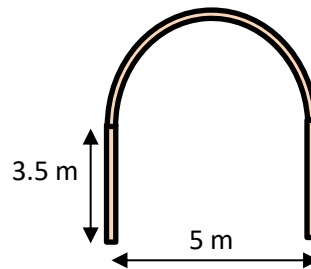
*Give your answer to the nearest cm.*



Perimeter of the window is \_\_\_\_\_.

- 2) The arch below is made of two straight sections and a semi-circle. Work out the perimeter of the arch.

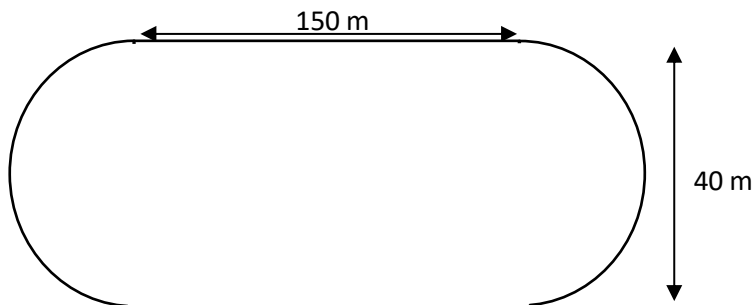
*Give your answer to 1 decimal place.*



Perimeter of the arch is \_\_\_\_\_.

- 3) A running track is made up of 2 semi-circles at either end and a rectangle in the middle (see diagram below).

What is the perimeter of the track to the nearest yard?



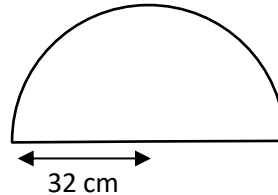
Perimeter of the track is \_\_\_\_\_.



## PERIMETER OF A SEMI-CIRCLE PROBLEMS 2B ANSWERS

### Working out

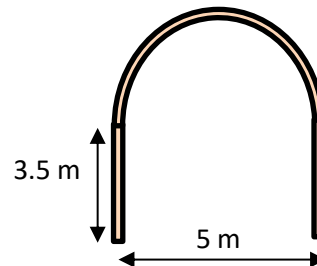
- 1) A semicircular window has a radius of 32 cm.  
What is the perimeter of the window?  
*Give your answer to the nearest cm.*



$$\begin{aligned} \text{Diameter} &= 32 \times 2 = 68 \\ \text{Perimeter} &= \text{curved} \\ &\text{section} + \text{diameter.} \\ &= \pi \times 32 + 68 \text{ cm} \\ &= 169 \text{ cm} \end{aligned}$$

Perimeter of the mirror is 169 cm.

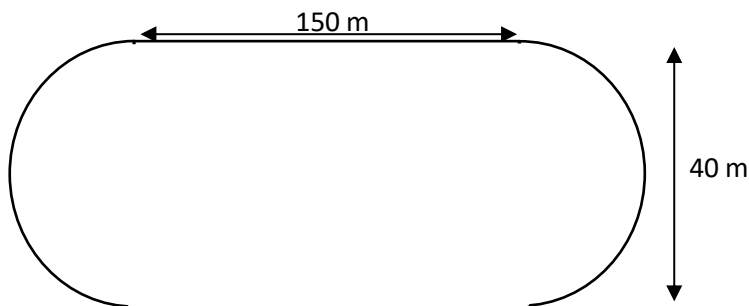
- 2) The arch below is made of two straight sections and a semi-circle. Work out the perimeter of the arch.  
*Give your answer to 1 decimal place.*



$$\begin{aligned} \text{Radius of arch} &= 5 \div 2 = \\ &2.5 \text{ m.} \\ \text{Perimeter} &= \text{perimeter of} \\ &\text{semi-circle} + \text{two straight} \\ &\text{sections} \\ &= \pi \times 2.5 + 2 \times 3.5 \\ &= 11.4 \text{ m} \end{aligned}$$

The perimeter of the arch is 11.4 m.

- 3) A running track is made up of 2 semi-circles at either end and a rectangle in the middle (see diagram below).  
What is the perimeter of the track to the nearest yard?



$$\begin{aligned} \text{Perimeter} &= \text{perimeter of} \\ &\text{two semi-circles} + \\ &\text{perimeter of the sides.} \\ &\text{The two semi-circles add} \\ &\text{up to make one whole} \\ &\text{circle.} \\ \text{Perimeter of circle} &= \pi \times \\ &40 = 125.7 \text{ m} \\ \text{Perimeter of straight parts} \\ &= 2 \times 150 = 300 \text{ m.} \\ \text{Total perimeter} &= 125.7 + \\ &300 = 425.7 \text{ m} \end{aligned}$$

Perimeter of the track is 425.7 m