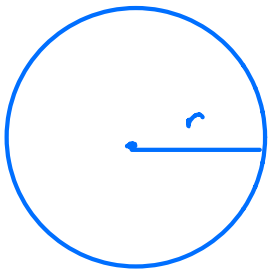
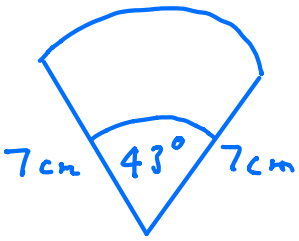
Revision Perimeter and Area

Circle



Circumference (Perimeter) $= 2\pi r$

Area $= \pi r^2$



Find perimeter

= arc length + radius + radius

$$2\pi r \times \frac{43}{360} + r + r$$

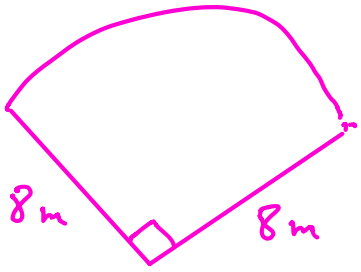
$$= 2 \times \pi \times 7 \times \frac{43}{360} + 7 + 7$$

$$= 19.25 \text{ cm}$$

Find Area

$$= \pi r^2 \times \frac{43}{360} = \pi \times 7^2 \times \frac{43}{360} = 18.4 \text{ cm}^2$$

Exercise

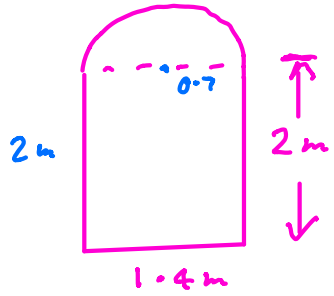


Find Perimeter and Area

$$\text{Perimeter} = \frac{2\pi r}{4} + r + r$$

$$= \frac{2 \times \pi \times 8}{4} + 8 + 8 = 28.6 \text{cm}$$

$$\text{Area} = \frac{\pi r^2}{4} = \frac{\pi \times 8^2}{4} = 50.3 \text{cm}^2$$



Church Window

Find perimeter and area

$$\text{Perimeter} = \frac{2\pi r}{2} + 2 + 2 + 1.4$$

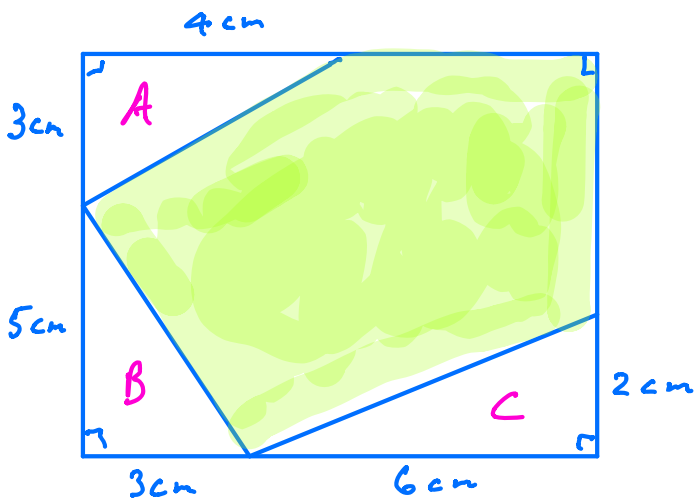
$$= \pi \times 0.7 + 5.4$$

$$= 7.60\,m$$

$$\text{Area} = \frac{\pi r^2}{2} + 2 \times 1.4$$

$$= \frac{\pi \times 0.7^2}{2} + 2.8$$

$$= 3.57\,m^2$$



Find Shaded Area

Rectangle $9 \times 8 = 72\,cm^2$

$$A = \frac{3 \times 4}{2} = 6\,cm^2$$

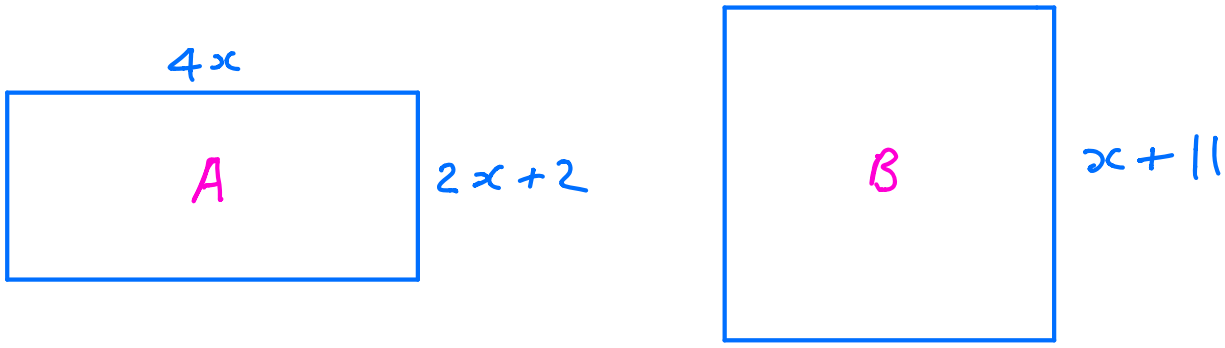
$$B = \frac{3 \times 5}{2} = 7.5\,cm^2$$

$$C = \frac{2 \times 6}{2} = 6\,cm^2$$

Triangles Total $= 19.5\,cm^2$

$$\begin{array}{r} 72.0 \\ 19.5 - \\ \hline 52.5\,cm^2 \end{array}$$

Shaded Area $52.5\,cm^2$



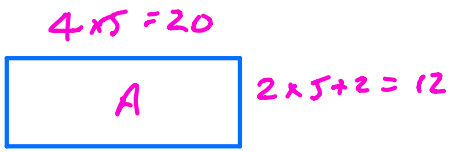
Rectangle A and Square B have the same perimeter

i) Find x

ii) Find area of A

i)
$$2(4x) + 2(2x+2) = 4(x+11)$$
$$8x + 4x + 4 = 4x + 44$$
$$12x + 4 = 4x + 44$$
$$12x - 4x = 44 - 4$$
$$8x = 40$$
$$x = \frac{40}{8}$$
$$x = 5$$

ii)



Area A = $20 \times 12 = 240\ cm^2$