Sectors and Arcs

Area = area of two sectors

$$= \pi r_1^2 \times \frac{30}{360} + \pi r_2^2 \times \frac{330}{360}$$

$$= \pi \times 4^2 \times \frac{30}{360} + \pi \times 1^2 \times \frac{330}{360}$$

$$= 7.07 \text{ cm}^2$$

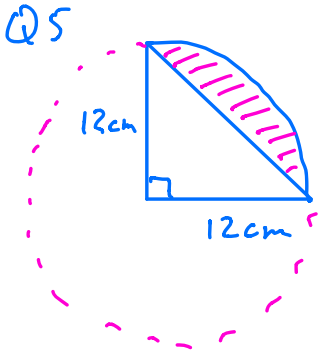
Perimeter = small arc + big arc + 2 straight edges

$$= 2\pi r_1 \times \frac{30}{360} + 2\pi r_2 \times \frac{330}{360} + 3 + 3$$

$$= 2\pi \times 4 \times \frac{30}{360} + 2 \times \pi \times 1 \times \frac{330}{360} + 6$$

$$= 13.9 \text{ cm}$$

Q5



Find shaded area

= sector area − triangle area

$$= \pi r^2 \times \frac{90}{360} - \frac{1}{2} \text{ base} \times \text{height}$$

$$= \pi \times 12^2 \times \frac{90}{360} - \frac{1}{2} \times 12 \times 12$$

$$= 41.1 \text{ cm}^2$$

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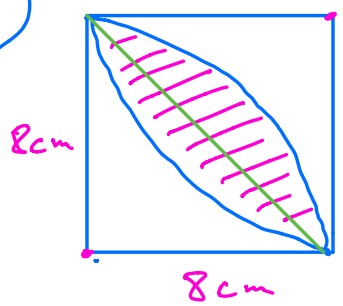
6)



Find Shaded Area

Half shaded area

= Sector area − triangle area

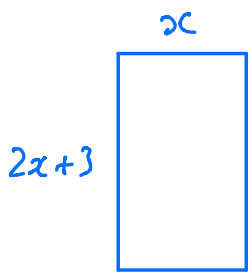
$= \pi \times 8^2 \times \frac{90}{360} - \frac{1}{2} \times 8 \times 8$

$= 18.265$ cm

All shaded area $= 36.5$ cm

Rectangles

Ex1



Perimeter = 36 cm

Find length and width

$2x+3+x+2x+3+x=36$

$6x+6=36$

$6x=36-6$

$6x=30$

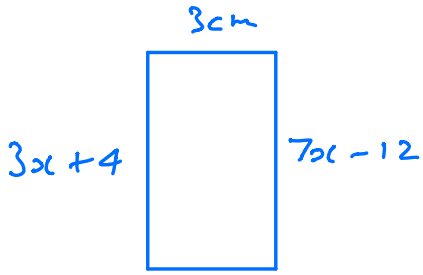
$x=\frac{30}{6}$

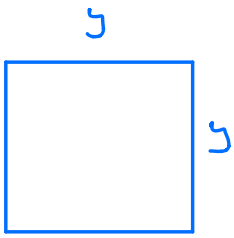
$x=5$

Length $=2(5)+3$
$=13$ cm

Width $=5$ cm

Ex2





The rectangle and the square have the same permeter. Find y the length of the square

$$7x - 12 = 3x + 4$$
$$7x - 3x = 4 + 12$$
$$4x = 16$$
$$x = \frac{16}{4}$$
$$x = 4$$

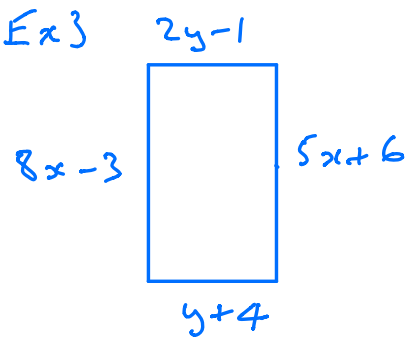
$3x + 4$
$= 3(4) + 4 = 16$

$7x - 12$
$= 7(4) - 12 = 16$

Perimeter of Rectangle
$= 16 + 3 + 16 + 3$
$= 38$ cm

Length of Square
$= \frac{38}{4} = 9.5$ cm
$y = 9.5$ cm

Ex3



Find the perimeter and area of rectangle

$$8x - 3 = 5x + 6$$
$$8x - 5x = +6 + 3$$
$$3x = 9$$
$$x = \frac{9}{3}$$
$$x = 3$$

$$2y - 1 = y + 4$$
$$2y - y = +4 + 1$$
$$y = 5$$

Width $= 5 + 4$
$= 9$ cm

Length $= 5(3) + 6$
$= 15 + 6$
$= 21$ cm

Perimeter $= 21 + 9 + 21 + 9 = 60$ cm
Area $= 21 \times 9 = 189$ cm^2