

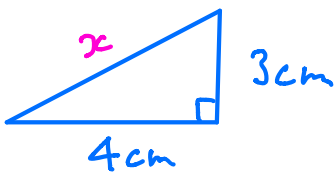
HOMWORK 15A

Perimeter of simple and composite shapes

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Q1 Calculate Perimeter

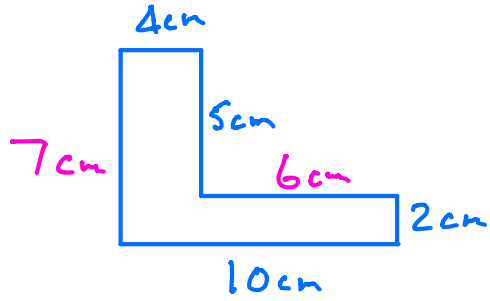
a)



$$\begin{aligned}
 3^2 + 4^2 &= x^2 \\
 9 + 16 &= x^2 \\
 25 &= x^2 \\
 \sqrt{25} &= x \\
 5\text{cm} &= x
 \end{aligned}$$

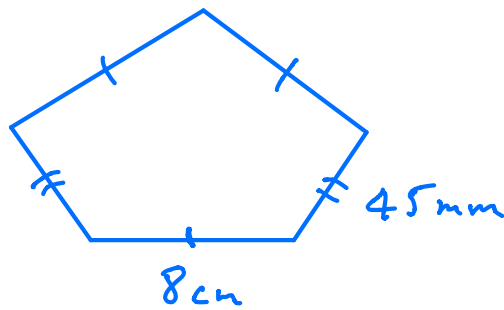
Perimeter
 $3 + 4 + 5$
 $= 12\text{cm}$

b)



$$\begin{aligned}
 &4 + 5 + 6 + 2 + 10 + 7 \\
 &= 34\text{cm}
 \end{aligned}$$

c)

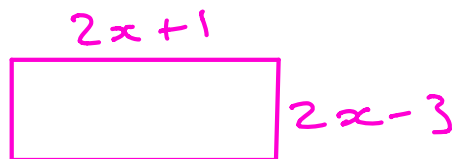


$$8 + 8 + 8 + 4.5 + 4.5$$

$$= 33 \text{ cm}$$

Q3 Perimeter Reasoning

The width of a rectangle is $2x - 3$ metres
 Its length is 4 metres longer than the width
 Find its perimeter in terms of x

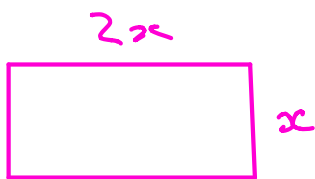


$$\begin{aligned} \text{Perimeter} &= 2x+1 + 2x-3 + 2x+1 + 2x-3 \\ &= 8x-4 \text{ metres} \end{aligned}$$

Q5 Perimeter Problem Solving

A farmer has 600m of fencing for a rectangular field. He wants the field to be at least twice as long as it is wide, but no more than 3 times as long as it is wide.

Suggest two sets of dimensions that use up all the fencing and meet his requirements



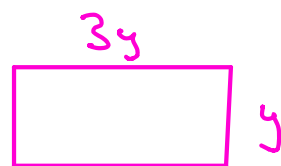
$$2x + x + 2x + x = 6x$$

$$6x = 600\text{m}$$

$$x = 100\text{m}$$

200m long
100m wide

210m long
90m wide



$$3y + y + 3y + y = 8y$$

$$8y = 600\text{m}$$

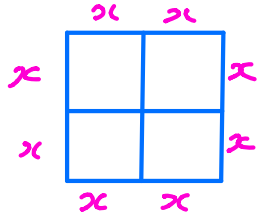
$$y = \frac{600\text{m}}{8}$$

$$y = 75\text{m}$$

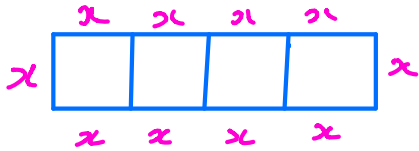
$$3y = 225\text{m}$$

225m long
75m wide

Q7 Perimeter Diagrams



The perimeter of these 4 square tiles is 60 cm



What is the perimeter when they are arranged in a line like this?

$$8x = 60 \text{ cm}$$

$$x = \frac{60}{8} = 7.5 \text{ cm}$$

$$\text{New perimeter} = 10x = 10 \times 7.5 = 75 \text{ cm}$$
