

(1) Convert the following to the unit as indicated in brackets:

$$\begin{aligned} \text{(a)} \quad 84 \text{ mm (cm)} \\ &= \underline{84 \div 10} \\ &= \underline{8,4 \text{ cm}} \end{aligned}$$

$$\begin{aligned} \text{(b)} \quad 120 \text{ cm}^2 (\text{m}^2) \\ &= \underline{120 \div (100)^2} \\ &= \underline{0,012 \text{ m}^2} \end{aligned}$$

$$\begin{aligned} \text{(c)} \quad 2,5 \text{ km (cm)} \\ &= \underline{2,5 \times 100\,000} \\ &= \underline{250\,000 \text{ cm}} \end{aligned}$$

$$\begin{aligned} \text{(d)} \quad 15 \text{ mm}^2 (\text{m}^2) \\ &= \underline{15 \div (1000)^2} \\ &= \underline{0,000015 \text{ m}^2} \end{aligned}$$

$$\begin{aligned} \text{(e)} \quad 6\,789 \text{ cm (mm)} \\ &= \underline{6\,789 \times 10} \\ &= \underline{67\,890 \text{ mm}} \end{aligned}$$

$$\begin{aligned} \text{(f)} \quad 2 \text{ ha (km}^2\text{)} \\ &= \underline{20\,000 \text{ m}^2} \\ &= \underline{20\,000 \div (1000)^2} \\ &= \underline{0,02 \text{ km}^2} \end{aligned}$$

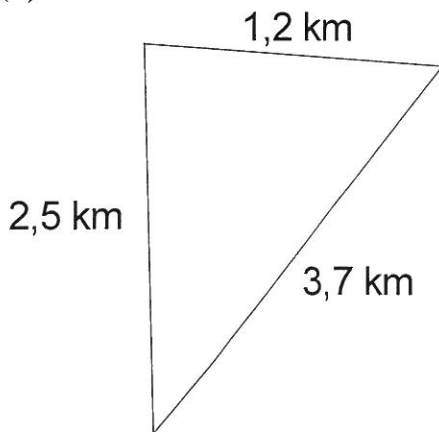
$$\begin{aligned} \text{(g)} \quad 0,35 \text{ km (m)} \\ &= \underline{0,35 \times 1000} \\ &= \underline{350 \text{ m}} \end{aligned}$$

$$\begin{aligned} \text{(h)} \quad 870 \text{ m (cm)} \\ &= \underline{870 \times 100} \\ &= \underline{87\,000} \end{aligned}$$

$$\begin{aligned} \text{(i)} \quad 6 \text{ m}^2 (\text{cm}^2) \\ &= \underline{6 \times (100)^2} \\ &= \underline{60\,000 \text{ cm}^2} \end{aligned}$$

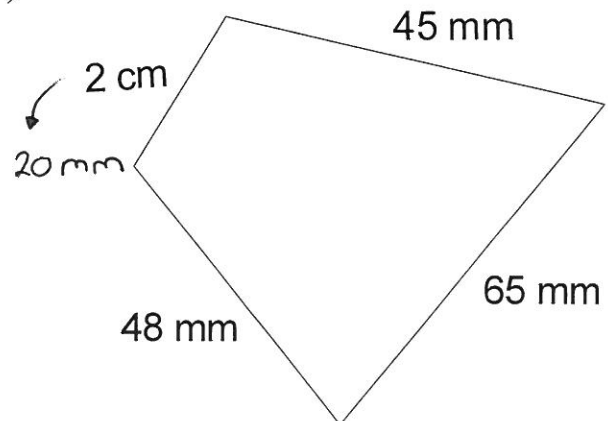
(2) Calculate the perimeter of the following figures. Use the given side lengths.

(a)



$$\begin{aligned} &\underline{\text{Perimeter}} \\ &= \underline{2,5 \text{ km} + 1,2 \text{ km} + 3,7 \text{ km}} \\ &= \underline{3,7 \text{ km} + 3,7 \text{ km}} \\ &= \underline{7,4 \text{ km}} \end{aligned}$$

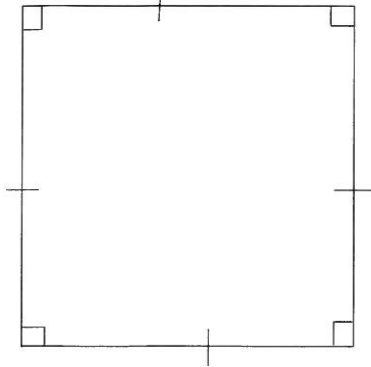
(b)



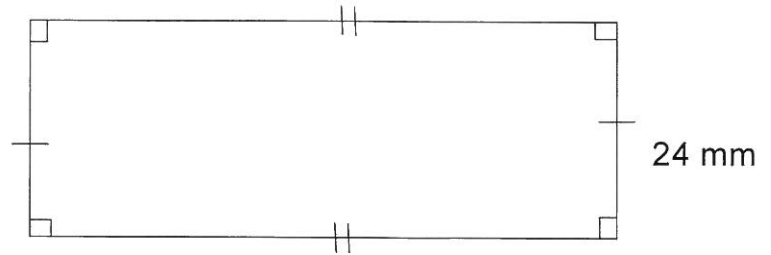
$$\begin{aligned} &\underline{\text{Perimeter}} \\ &= \underline{20 \text{ mm} + 48 \text{ mm} + 65 \text{ mm} + 45 \text{ mm}} \\ &= \underline{68 \text{ mm} + 110 \text{ mm}} \\ &= \underline{178 \text{ mm}} \end{aligned}$$

(3) Use formulas to calculate the perimeter and area of each of the following figures:

(a) Square
56 cm



(b) Rectangle
12 cm

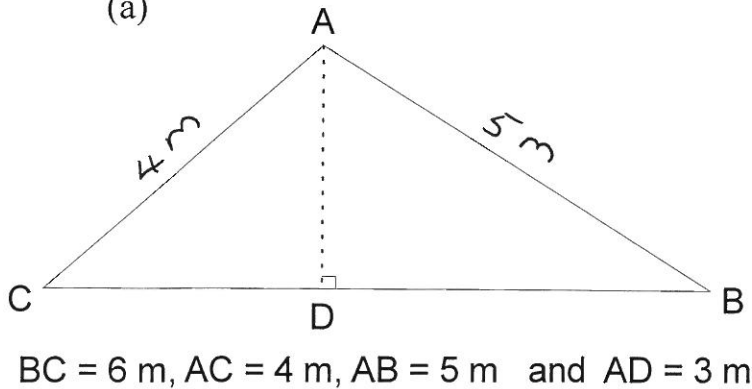


$$\begin{aligned}\text{Perimeter} &= 4 \times L \\ &= 4 \times (56 \text{ cm}) \\ &= 224 \text{ cm} \\ \text{Area} &= L^2 = (56 \text{ cm})^2 \\ &= 3136 \text{ cm}^2\end{aligned}$$

$$\begin{aligned}\text{Perimeter} &= 2L + 2B \\ &= 2 \times 120 \text{ mm} + 2 \times 24 \text{ mm} \\ &= 240 \text{ mm} + 48 \text{ mm} = 288 \text{ mm} \\ \text{Area} &= L \times B \\ &= 120 \text{ mm} \times 24 \text{ mm} \\ &= 2880 \text{ mm}^2\end{aligned}$$

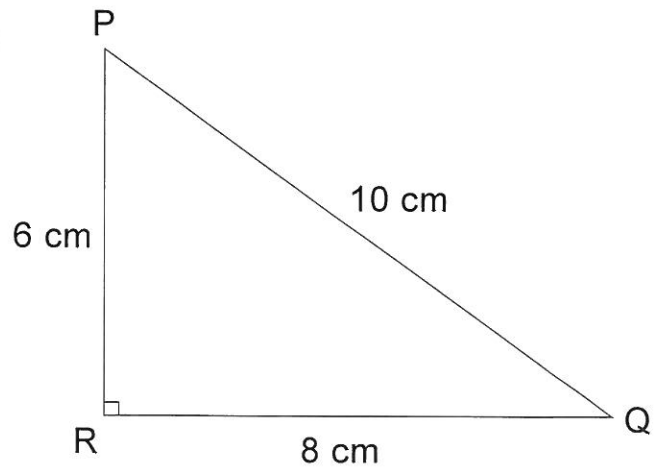
(4) Use formulas to calculate the perimeter and area of each of the following triangles:

(a)



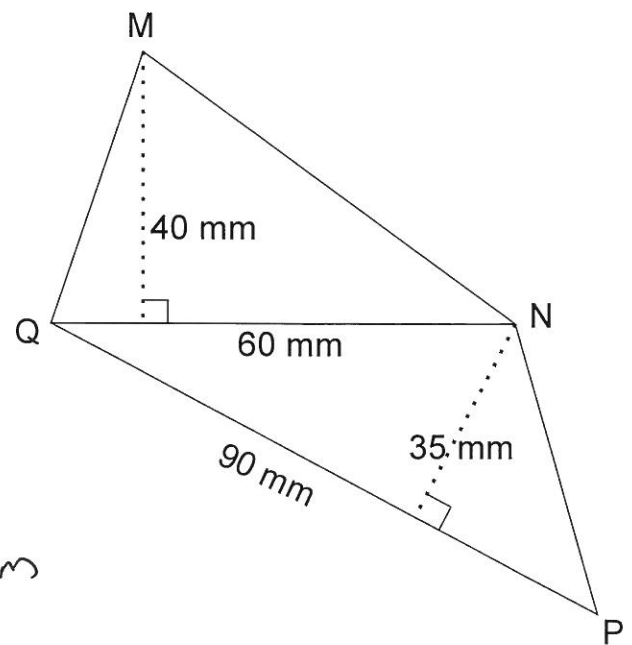
$$\begin{aligned}\text{Perimeter} &= 6 \text{ m} + 4 \text{ m} + 5 \text{ m} = 15 \text{ m} \\ \text{Area} &= \frac{1}{2} b \times h \\ &= \frac{1}{2} (6 \text{ m}) \times 3 \text{ m} \\ &= 3 \text{ m} \times 3 \text{ m} \\ &= 9 \text{ m}^2\end{aligned}$$

(b)



$$\begin{aligned}\text{Perimeter} &= 6 \text{ cm} + 10 \text{ cm} + 8 \text{ cm} \\ &= 24 \text{ cm} \\ \text{Area} &= \frac{1}{2} b \times h \\ &= \frac{1}{2} (8 \text{ cm}) \times 6 \text{ cm} \\ &= 4 \text{ cm} \times 6 \text{ cm} \\ &= 24 \text{ cm}^2\end{aligned}$$

- (5) Calculate the area of MNPQ in the figure.



$$\begin{aligned} \text{Area } \triangle MQN &= \frac{1}{2} b \times h \\ &= \frac{1}{2} (60 \text{ mm}) \times 40 \text{ mm} \\ &= 1200 \text{ mm}^2 \end{aligned}$$

$$\begin{aligned} \text{Area } \triangle PNQ &= \frac{1}{2} b \times h \\ &= \frac{1}{2} \times 90 \text{ mm} \times 35 \text{ mm} \\ &= 1575 \text{ mm}^2 \end{aligned}$$

$$\begin{aligned} \therefore \text{Total Area } MNPQ &= 1200 \text{ mm}^2 + 1575 \text{ mm}^2 \\ &= 2775 \text{ mm}^2 \end{aligned}$$

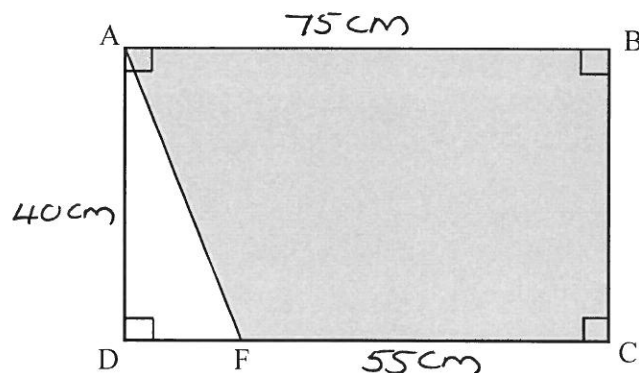
- (6) Calculate the area of the coloured section:

ABCD is a rectangle.

AD = 40 cm

AB = 75 cm

FC = 55 cm



$$\begin{aligned} \text{Area } ABCD &= L \times B = 75 \text{ cm} \times 40 \text{ cm} \\ &= 3000 \text{ cm}^2 \end{aligned}$$

$$DF = DC - FC = 75 \text{ cm} - 55 \text{ cm} = 20 \text{ cm}$$

[AB = DC = 75 cm $\rightarrow$ opposite sides of rectangle]

$$\begin{aligned} \text{Area } \triangle ADF &= \frac{1}{2} b \times h = \frac{1}{2} (20 \text{ cm}) \times (40 \text{ cm}) \\ &= 10 \text{ cm} \times 40 \text{ cm} \\ &= 400 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} \therefore \text{Area } ABFC &= 3000 \text{ cm}^2 - 400 \text{ cm}^2 \\ &= 2600 \text{ cm}^2 \end{aligned}$$