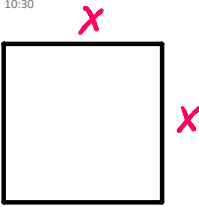





①  Square
 Area = $(x)(x) = x^2$

Eg1  Find the length of the side
 $(x)(x) = 36$
 $x^2 = 36$
 $x = \sqrt{36} = 6$
 $(6)(6) = 36$

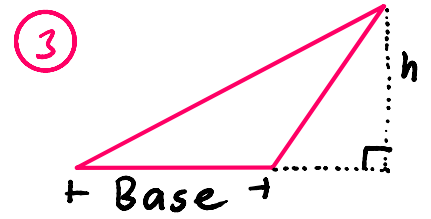
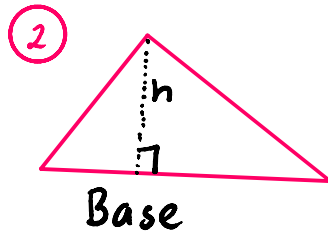
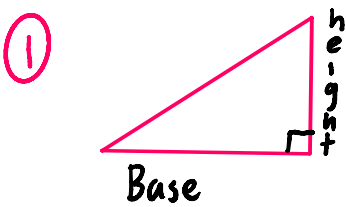
②  Rectangle
 Area = $l \times w = (l)(w)$

Eg1  Find the length of the missing side
 Area = 84 cm^2
 12 cm

$(12)(x) = 84$
 $x = \frac{84}{12} = 7$
 $(12)(7) = 84$

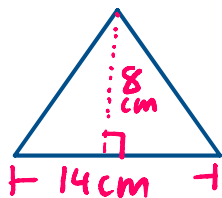
$(12)(?) = 84$
 $? = \frac{84}{12} = 7$
 $? = 7 \text{ cm}$

③ Triangles



Area of triangle = $\frac{1}{2}$ Base \times \perp height
 Formula

Eg1 Find the area of the triangle



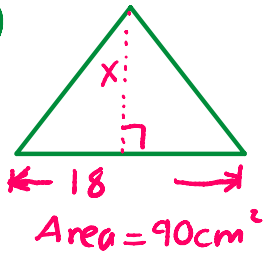
$\perp h = 8 \text{ cm}$
 Base = 14 cm
 $\frac{1}{2}bh = \frac{1}{2}(14) \times 8$
 $7 \times 8 = 56 \text{ cm}^2$

$\downarrow \downarrow$
 B H
 A G
 S S
 E T

Q.7) Find the missing values in each of the following

Eg2) Find the missing values in each of the following

①



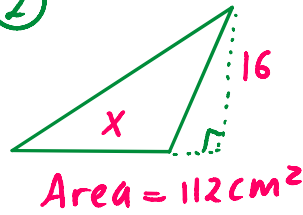
$$\frac{1}{2} \text{ Base} \times \text{height}$$

$$\frac{1}{2} (18) \times (x) = 90$$

$$9x = 90$$

$$\div 9 \quad | \quad x = 10 \quad | \quad \div 9$$

②



$$\frac{1}{2} (x) \times 16 = 112$$

$$8x = 112$$

$$\div 8 \quad | \quad x = 14 \quad | \quad \div 8$$

H/W Pg 87 Q5 ii, iii Q 6 ii
 109 Q5 ii, iii O 6 ii



T&T2 6.1
Review of...



T&T2 6.1
Review of...

Perimeter - Area - Volume

Chapter

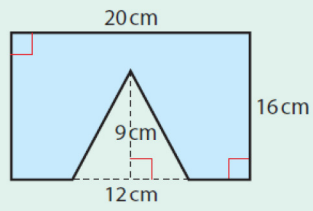
6

85

Section 6.1 Review of perimeter and area

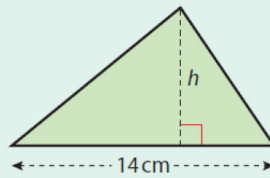
Example 1

Find the area of the shaded region of this figure.



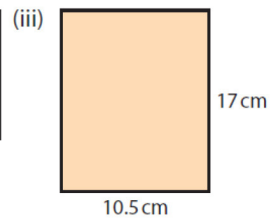
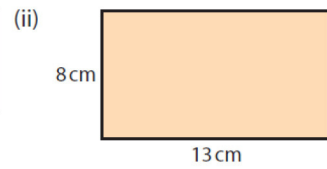
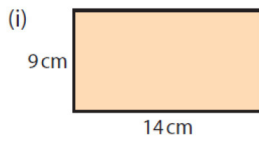
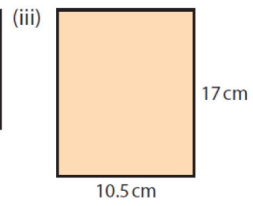
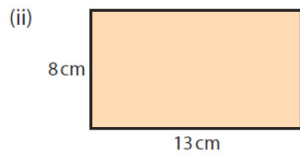
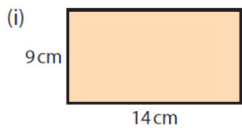
Example 2

The area of the given triangle is 56 cm^2 .
Find the perpendicular height, h .



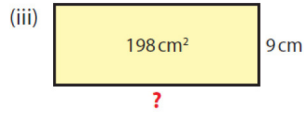
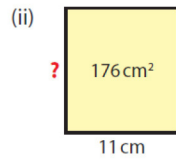
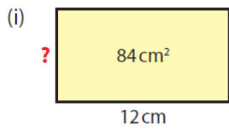
Exercise 6.1

1. Work out the perimeter of each of these rectangles:

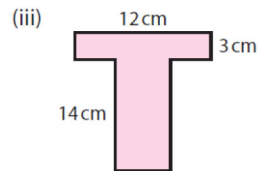
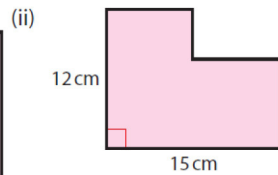
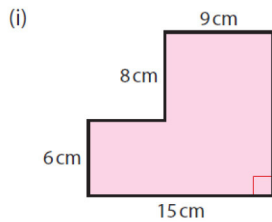


2. Find the area of each of the rectangles in Question 1 above.

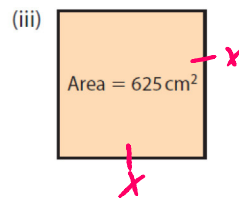
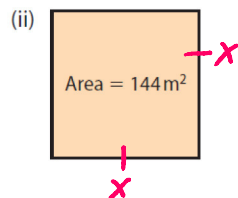
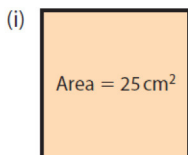
3. Find the length of the missing side in each of these rectangles:



4. Work out the perimeter of each of these shapes, where all the angles are right angles:



5. Find the length of the side of each square shown below:



ii) $x^2 = 144$
 $x = \sqrt{144}$
 $x = 12$

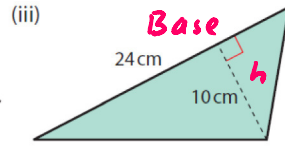
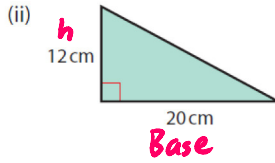
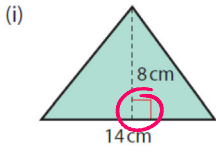
iii) $x^2 = 625$
 $x = \sqrt{625}$
 $x = 25 \text{ cm}$

H/w

H/w

$$\frac{1}{2} \text{ Base} \times \perp \text{ height}$$

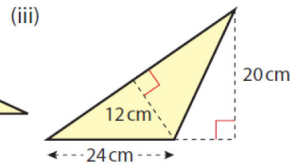
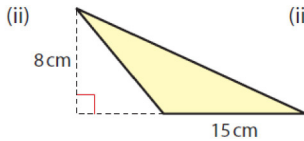
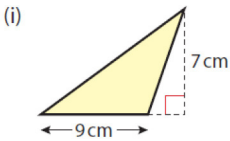
6. Find the area of each of these triangles:



ii) $\frac{1}{2}(20) \times 12$
 $10 \times 12 = 120 \text{ cm}^2$

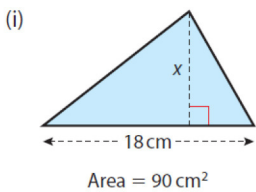
iii) $\frac{1}{2}(24) \times 10$
 $12 \times 10 = 120 \text{ cm}^2$

7. Work out the areas of these triangles:

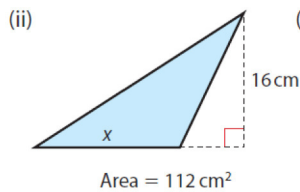


$$\frac{1}{2} B \times h$$

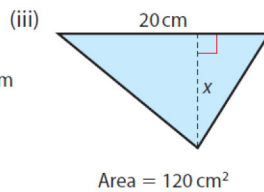
8. Find the length of the line segment marked x in each of these triangles:



$\frac{1}{2}(18)(x) = 90$
 $9x = 90$
 $\div 9 \quad x = 10$



$\frac{1}{2}(x)(16) = 112$
 $8x = 112$
 $\div 8 \quad x = 14$



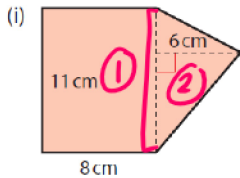
$\frac{1}{2}(20)(x) = 120$
 $10x = 120$
 $\div 10 \quad x = 12$

$$\begin{array}{l} 9x = 90 \\ \div 9 \quad | \quad x = 10 \quad | \quad \div 9 \end{array}$$

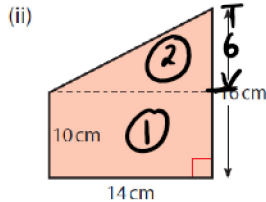
$$\begin{array}{l} 8x = 112 \\ \div 8 \quad | \quad x = 14 \quad | \quad \div 8 \end{array}$$

$$\begin{array}{l} 10x = 120 \\ \div 10 \quad | \quad x = 12 \quad | \quad \div 10 \end{array}$$

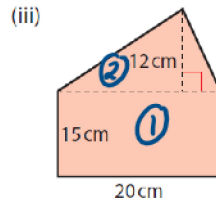
9. Find the areas of the following shapes which are composed of rectangles and triangles.



$$\begin{array}{l} \textcircled{1} 11 \times 8 = 88 \text{ cm}^2 \\ \textcircled{2} \frac{1}{2}(11) \times 6 = \\ \quad 5.5 \times 6 = 33 \text{ cm}^2 \\ 88 + 33 = 121 \text{ cm}^2 \end{array}$$



$$\begin{array}{l} \textcircled{1} 14 \times 10 = 140 \text{ cm}^2 \\ \textcircled{2} \frac{1}{2}(14) \times 6 \\ \quad 7 \times 6 = 42 \text{ cm}^2 \\ 140 + 42 = 182 \text{ cm}^2 \end{array}$$

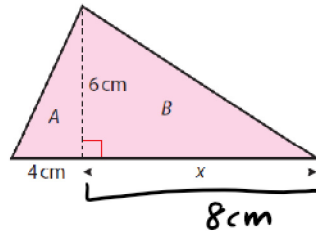


$$\begin{array}{l} \textcircled{1} 15 \times 20 = 300 \\ \textcircled{2} \frac{1}{2}(20) \times 12 \\ \quad 10 \times 12 = 120 \\ \text{Total } 300 + 120 \\ \quad = 420 \text{ cm}^2 \end{array}$$

10. Triangle B is double the area of triangle A.

The height of both triangles is 6 cm.

- Find the area of triangle A.
- Find the area of triangle B.
- Work out the value of x .



i) Area of A $\frac{1}{2}(4)(6)$
 $2 \times 6 = 12 \text{ cm}^2$

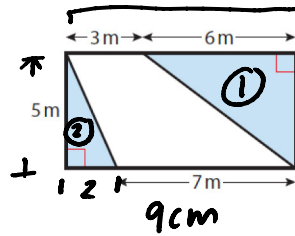
ii) Area of B $12 \times 2 = 24 \text{ cm}^2$

iii) Find x $\frac{1}{2}(x)(6) = 24$
 $\div 3 \quad | \quad 3x = 24 \quad | \quad \div 3$
 $\quad \quad | \quad x = 8 \quad | \quad \div 3$

H/w

11. Find the area of the shaded portion of the diagram on the right.

Hence find the area of the unshaded part.



Total Area

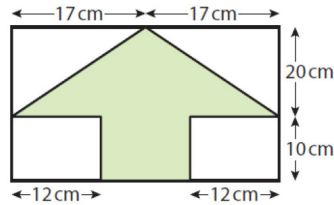
$$5 \times 9 = 45 \text{ cm}^2$$

$$\textcircled{1} \frac{1}{2}(2)(5)$$

$\textcircled{2}$

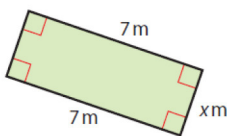
HW

12. Find the area of the shaded figure in the given diagram.

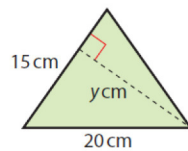


HW

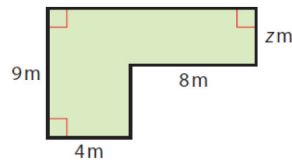
13. Under each figure below, the area is given.
Work out the values of x , y and z .



Area = 28 m^2

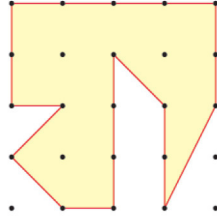


Area = 120 cm^2



Area = 60 m^2

- 14.** The shape on the right has been drawn on centimetre dot paper.
Work out the area of this shaded shape.

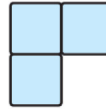


- 15.** Garry has seven tiles.
Each tile is a square of side 10 cm.



The tiles must be laid edge-to-edge similar to that shown on the right.

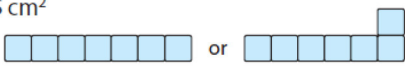


- (i) How can Garry arrange the seven tiles so that the resulting shape has the greatest possible perimeter?
(ii) How can Garry arrange the seven tiles so that the resulting shape has the smallest possible perimeter?



Answers

Exercise 6.1

1. (i) 46 cm (ii) 42 cm (iii) 55 cm
2. (i) 126 cm^2 (ii) 104 cm^2 (iii) 178.5 cm^2
3. (i) 7 cm (ii) 16 cm (iii) 22 cm
4. (i) 58 cm (ii) 54 cm (iii) 58 cm
5. (i) 5 cm (ii) 12 m (iii) 25 cm
6. (i) 56 cm^2 (ii) 120 cm^2 (iii) 120 cm^2
7. (i) 31.5 cm^2 (ii) 60 cm^2 (iii) 240 cm^2
8. (i) 10 cm (ii) 14 cm (iii) 12 cm
9. (i) 121 cm^2 (ii) 182 cm^2 (iii) 420 cm^2
10. (i) 12 cm^2 (ii) 24 cm^2 (iii) 8 cm
11. 20 m^2 ; 25 m^2 **12.** 440 cm^2
13. (i) $x = 4$ (ii) $y = 16$ (iii) $z = 3$
14. 11.5 cm^2

15. (i)  or 
etc. ($P = 160 \text{ cm}$)
(ii)  ($P = 120 \text{ cm}$)