CHAPTER 4: AREA OF TRIANGLE

Level 1

**4.1**

Exercise 1

1. If the height is AX, the base is _____.
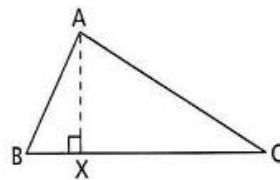
2. If the height is LN, the base is _____.
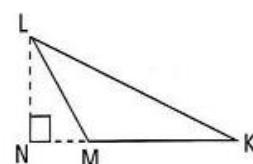

3. If the height is DE, the base is _____.
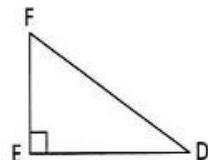
. For triangle XYZ,
   (a) if the height is XY, the base is _____.
   (b) if the height is XW, the base is _____.
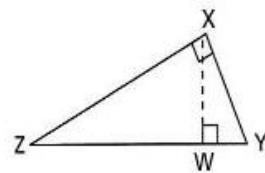
5. If the base is SU, the height is _____.
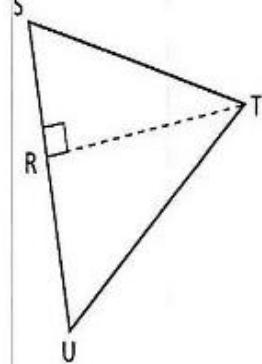
6. For triangle GHI,
   (a) if the base is GH, the height is _____.
   (b) if the base is GI, the height is _____.
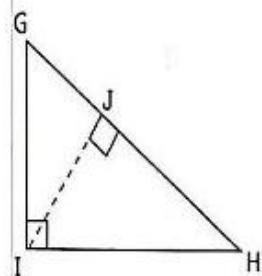
7. If the base is RU, the height is _____.
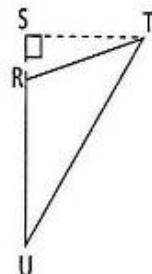
8. For triangle PQR,
   (a) if the base is QR, the height is _____.
   (b) if the base is PQ, the height is _____.
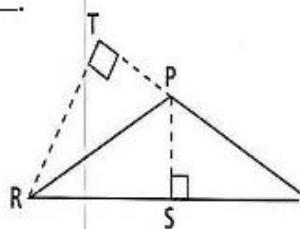
Use the figures below to answer questions 9 and 10.

1 cm

1 cm
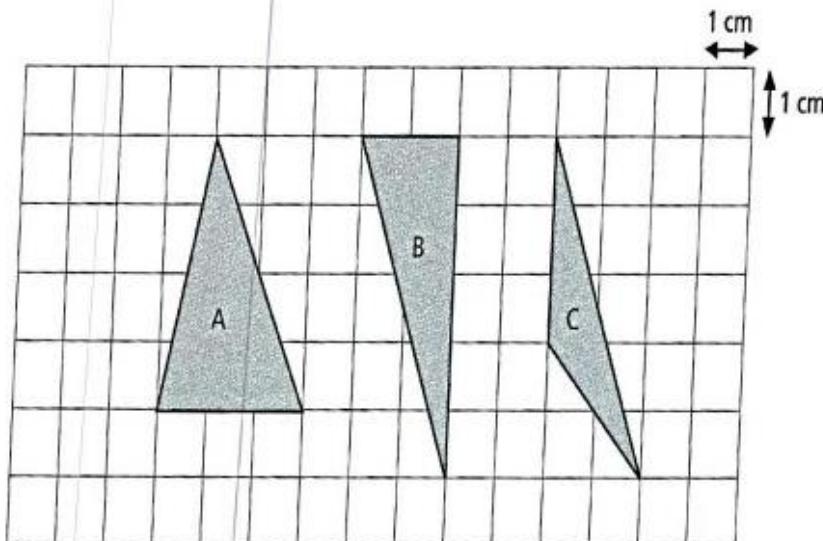
9. Area of triangle A = $\frac{1}{2}$ × [3] × [4] = [6] cm²

   Area of triangle B = $\frac{1}{2}$ × [2] × [5] = [5] cm²

   Area of triangle C = $\frac{1}{2}$ × [3] × [2] = [3] cm²

10. 3 cm²

9. Find the area of each shaded triangle.

   Area of triangle A = $\frac{1}{2}$ × _____ × _____ = _____ cm²

   Area of triangle B = $\frac{1}{2}$ × _____ × _____ = _____ cm²

   Area of triangle C = $\frac{1}{2}$ × _____ × _____ = _____ cm²

0. Find the difference between areas of the largest triangle and the smallest triangle.

Exercise 2

1. Find the area of each shaded triangle.

(a)

5 cm
3 cm
4 cm

(b)

8 m
4 m   13 m

(c)

2 cm   6 cm
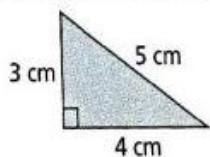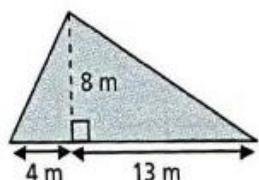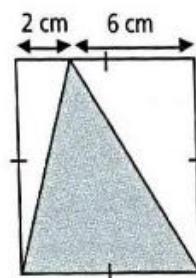
2. Find the area of each shaded triangle.

(a)

18 cm
12 cm

(b)

3 m   10 m
9 m
15 m

(c)

13 cm
7 cm   5 cm
10 cm   2 cm
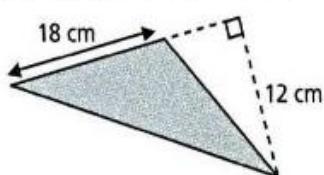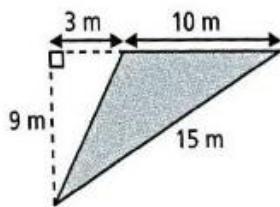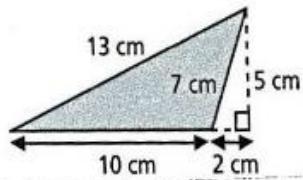
3. In triangle XYZ, XY = 11 cm, XZ = 26 cm, WY = 7 cm, WZ = 23 cm and WX = 9 cm. Find the area of triangle XYZ.
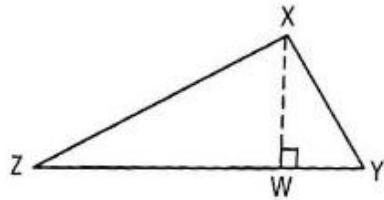
4. In the figure, DE = 10 m, EF = 8 m, GF = 20 m and DG = 12 m. Find the area of triangle EFG.
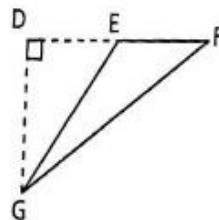
5. In triangle JKL, JM = 21 cm, KM = 10 cm and LM = 34 cm. Find the area of triangle JKL.
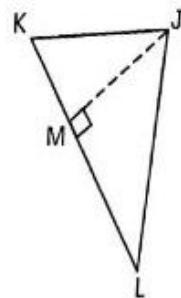
6. ABCD is a rectangle. BC = 8 cm and AE = AD = EB. Find the area of the shaded triangle.
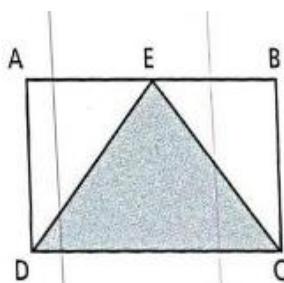
6. 64 cm²

7. 35 cm²

8. 27 cm²

7. EFGH is a rectangle. Find the area of the shaded triangle.

6 cm

16 cm

7 cm
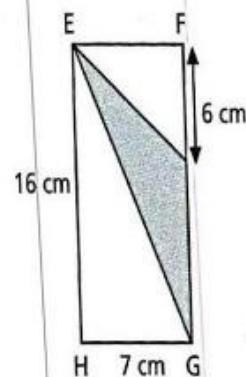
8. RSTU is a rectangle. UV = VT. Find the area of the shaded triangle.

12 cm

9 cm
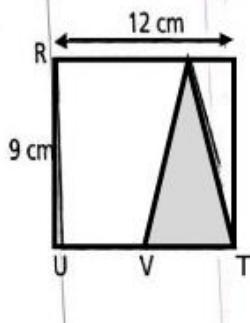
9. The figure shows a square of length 20 cm. Find the area of the shaded triangle.

9. 200 cm²
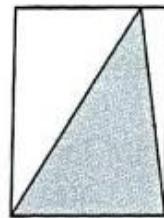
10. 32 cm²

10. The figure shows a square of length 16 cm. It is cut into 4 equal squares by the dotted lines. Find the area of the shaded triangle.
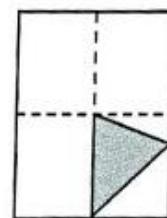
CHAPTER 4: AREA OF TRIANGLE

Level 2

1. The figure below is made up of 2 identical right-angled triangles. Find the area of the figure.

16 cm

25 cm

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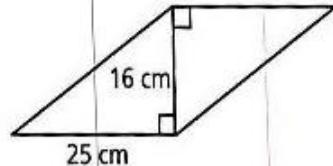
2. The hexagon below is made up of 6 identical equilateral triangles. Each triangle has an area of 14.5 cm². Find the area of the hexagon.

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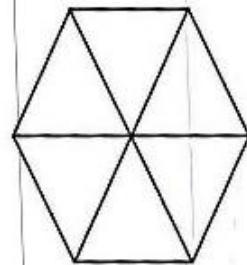
3. The figure shows a rectangle divided into 2 parts by the dotted line. Fi the area of the shaded part.
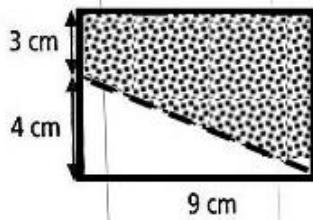
3 cm

4 cm

9 cm

4. Find the area of the shaded portion.

30 cm

14 cm

22 cm

8 cm

4. 604 cm²

5. 240 cm²

6. 255 cm²

---

5. Find the area of the shaded portion.

12 cm

27 cm

14 cm

---

5. Find the area of the shaded portion.

17 cm

12 cm

30 cm

7. Find the area of the shaded figure.

1 cm

1 cm
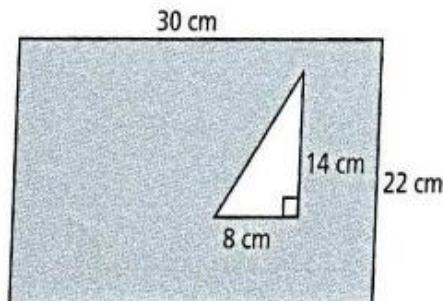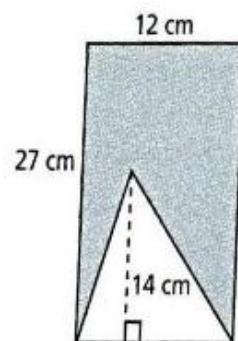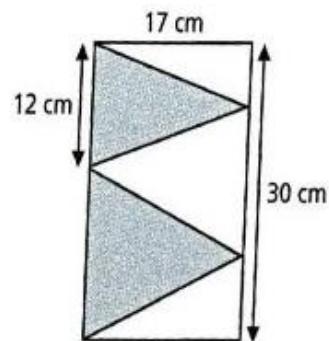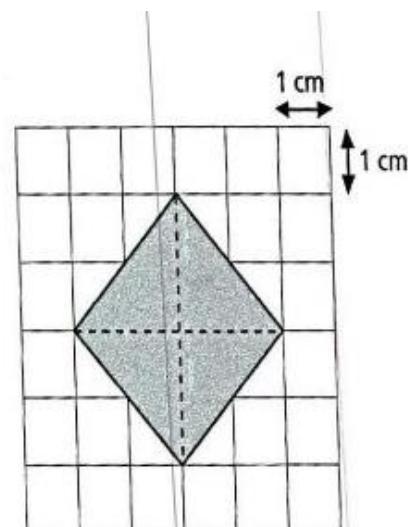
7. 8 cm²

8. 6 cm²

9. 30 cm²

8. Find the area of the shaded figure.

1 cm

1 cm
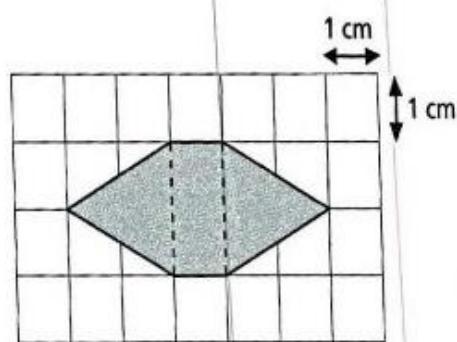
9. Find the area of the shaded figure.

2 cm

2
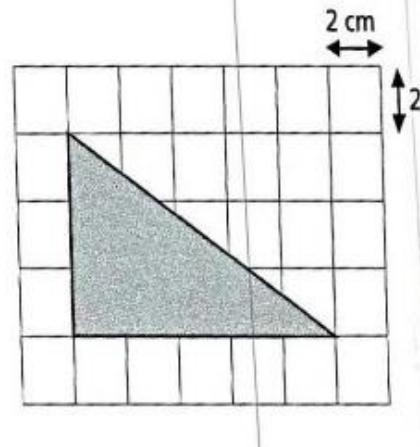
10. Find the area of the shaded figure.

3cm

3 cm
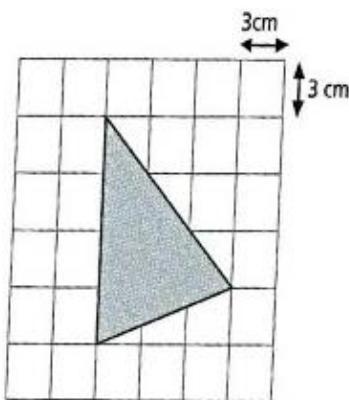
Exercise 2
Choose the correct answer and write its number in the brackets provided.

1. In the figure below, if SR is the height of triangle PQR, which line is the base?
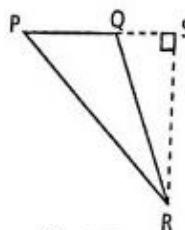
P   Q   S

R

  (1)   PR   (2)   PQ
  (3)   PS   (4)   QS   (   )

2. Find the area of the triangle.
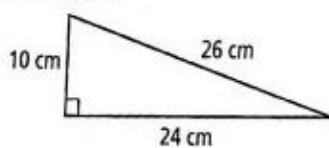
10 cm   26 cm

24 cm

  (1)   17 cm²   (2)   120 cm²
  (3)   130 cm²   (4)   312 cm²   (   )

Find the area of the triangle.

10 cm   10 cm
     6 cm

16 cm
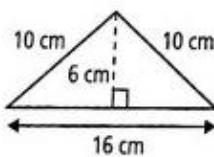
  (1)   60 cm²   (2)   50 cm²
  (3)   48 cm²   (4)   30 cm²   (   )

4. Find the area of the shaded figure.

1 cm

1 cm

(1) 15 cm²   (2) 14 cm²
(3) 13 cm²   (4) 12 cm²

5. Find the area of the shaded figure.

2 cm

2 cm
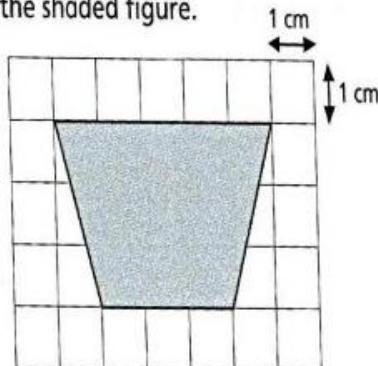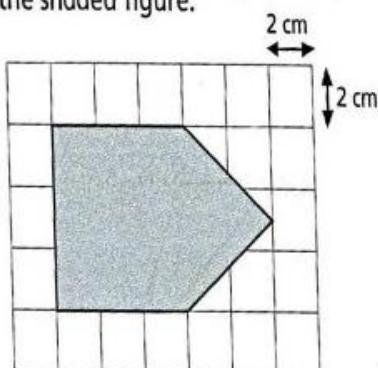
(1) 12 cm²   (2) 15 cm²
(3) 24 cm²   (4) 48 cm²

6. JKLM is a rectangle of length 12 cm and breadth 9 cm.
   Given that MN = 13 cm and LN = 5 cm.
   What is the base and height of the shaded triangle?
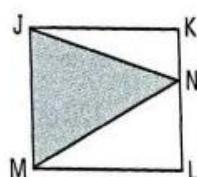
(1) Base = 5 cm, height = 12 cm
(2) Base = 5 cm, height = 13 cm
(3) Base = 9 cm, height = 12 cm
(4) Base = 9 cm, height = 13 cm

4. 4

5. 4

6. 3

(   )

(

(

7. If the base is AC, which line is the height?

(1) BE   (2) AD
(3) BC   (4) AB   (   )
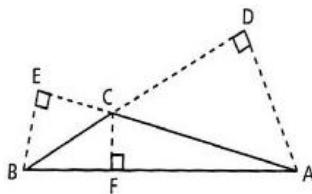
8. If the height is WY, which line is the base?
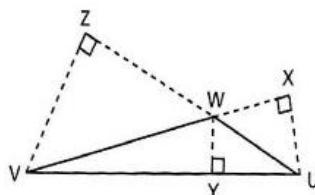
(1) VY   (2) UX
(3) UW   (4) UV   (   )

*9. The area of rectangle X is the same as the area of right-angled triangle Y. Find the perimeter of rectangle X.

32 cm

X

52 cm

20 cm   Y

48 cm
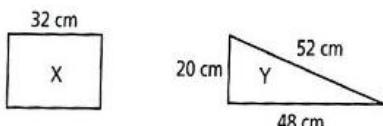
(1) 480 cm   (2) 120 cm
(3) 104 cm   (4) 94 cm   (   )

). A triangle of height 5 cm and base 4 cm is cut from one corner of a square paper. The length of the square paper is 15 cm. Find the area of the remaining paper.
(1) 205 cm²   (2) 215 cm²
(3) 245 cm²   (4) 300 cm²   (   )

CHAPTER 4: AREA OF TRIANGLE

Level 3

4.3

Exercise 1

1. The figure is made up of a square of length 6 cm and a triangle. Find the area of the figure.

9 cm
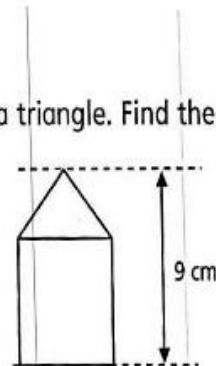
1. 45 cm²

2. 175 cm²

3. 60 cm²

2. Find the area of the shaded part.

8 cm

20 cm

7 cm

14 cm

3. Find the area of the shaded part.

8 cm

4 cm

15 cm

4. Find the area of the shaded part.

10 cm

13 cm

20 cm   4 cm
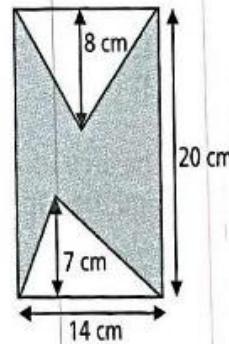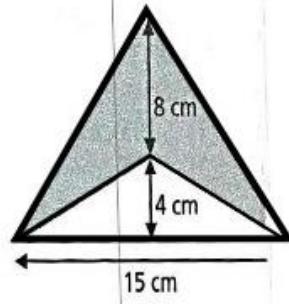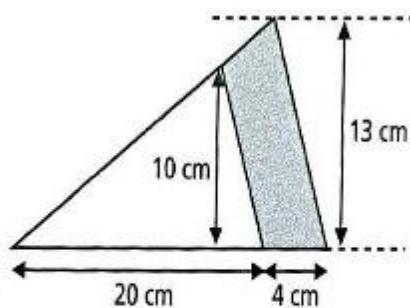
4. 56 cm²

5. 68 cm²

6. $\frac{17}{25}$

Use the figure below to answer questions 5 and 6.

2 cm

8 cm   12 cm
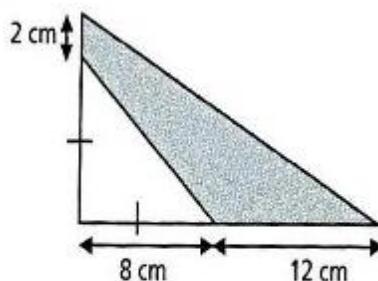
*5. Find the area of the shaded part.

---

6. What fraction of the whole figure is shaded?

Use the figure below to answer questions 7 and 8.
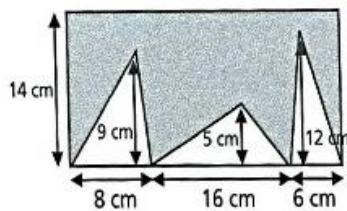

7. 308 cm²

8. $\frac{11}{15}$

9. 54 cm²

*7. Find the area of the shaded part.

_____

*8. What fraction of the whole figure is shaded?

_____

*9. The perimeter of the figure is 96 cm. Find the area of the shaded triangle
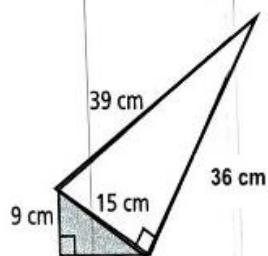
10. The perimeter of Square A is the same as the perimeter of Triangle B. Find the difference between the area of Square A and the area of Triangle B.

18 cm

A

B
18 cm
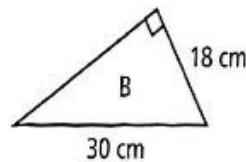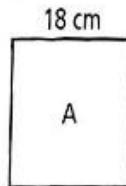
30 cm

Exercise 2

1. In triangle XYZ, XW is $\frac{2}{3}$ of XY.
   (a) Find XY.
   (b) Hence, find the area of the triangle XYZ.

Z

13 cm

X
20 cm
W
Y
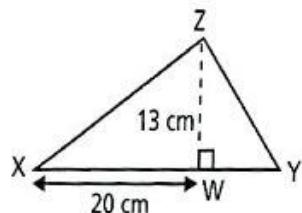
Use the figure below to answer questions 2 to 4.
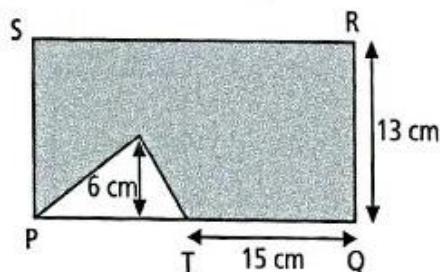
PQRS is a rectangle. PT is $\frac{2}{3}$ of QT.

*2. Find PT and PQ.

_____

*3. Hence, find the area of the shaded part.

_____

*4. What fraction of the figure is shaded?

Use the figure below to answer questions 5 and 6.
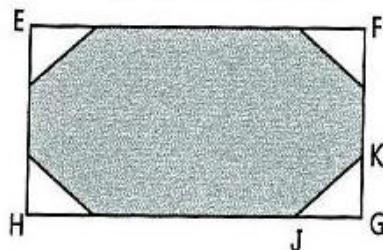
Four identical triangles were cut away from a rectangular cardboard EFGH of length 42 cm and breadth 18 cm, as shown in the figure above.

*5.   Given that JG is $\frac{1}{6}$ of HG and GK is $\frac{1}{3}$ of GF, find the area of the remaining cardboard.

*6.   (a)   What fraction of the cardboard was cut away?
      (b)   What fraction of the cardboard was left?

5. 672 cm²

6. (a) $\frac{1}{9}$

   (b) $\frac{8}{9}$

Use the figure below to answer questions 7 to 9.
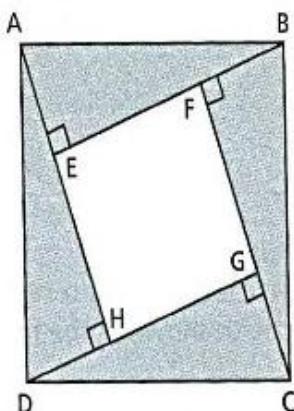
ABCD is a square. The shaded area is made up of 4 identical right-angled triangles.
AB = 39 cm, AE = 15 cm and EB = 36 cm.

7. What is the total area of the shaded parts?

8. Find the length of GH.

9. Find the perimeter and area of square EFGH.

7. 1080 cm²

8. 21 cm

9. 441 cm²

10. The figure shown is formed by 2 overlapping right-angled triangles. The overlapped part is a square of area 25 cm². Find the area of triangle B.

10. 168 cm²

23 cm

15 cm

A

B

7 cm

10 cm