

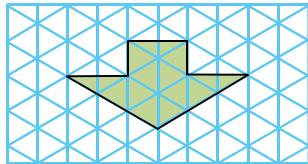
Chapter 7 Areas and Volumes of Simple Figures

Multiple Choice Section

1. Express 2 m^2 in cm^2 .

A. $200\,000 \text{ cm}^2$ B. $20\,000 \text{ cm}^2$ C. $2\,000 \text{ cm}^2$

2. In the figure, find the area of the shaded region.



$\triangle = 1 \text{ cm}^2$

A. 15 cm^2 B. 13 cm^2 C. 14 cm^2 D. 16 cm^2

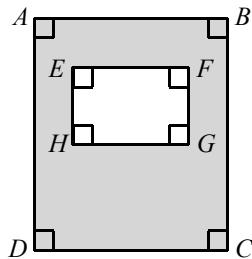
3. Irene has a kite of area 18 cm^2 . May also has one and its area is larger than Irene's by 600 mm^2 . Find the area of May's kite.

A. 24 cm^2 B. 78 cm^2 C. 618 mm^2 D. 780 mm^2

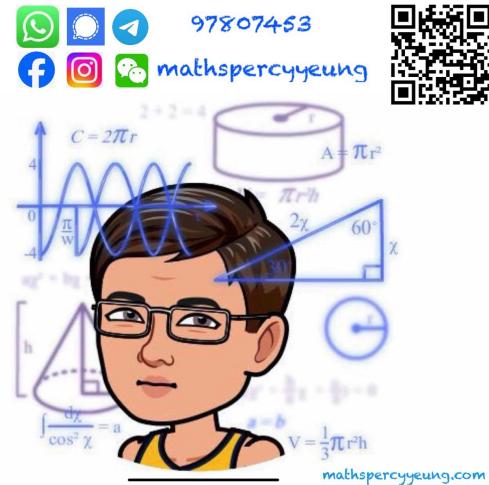
4. The length of a rectangle is 4 cm and its perimeter is 16 cm . Find the area of the rectangle.

A. 16 cm^2 B. 64 cm^2 C. 32 cm^2 D. 8 cm^2

5. In the figure, $AB = 9 \text{ cm}$, $BC = 10 \text{ cm}$, $EF = 5 \text{ cm}$ and $FG = 2 \text{ cm}$. Find the area of the shaded region.

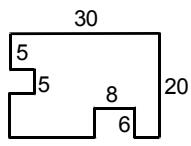


A. 80 cm^2 B. 85 cm^2 C. 70 cm^2 D. 75 cm^2

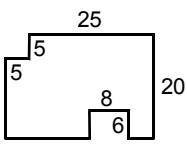


6. In each of the following figures, all corners are right angles. Which figure has an area different from others?

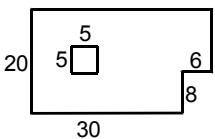
I.



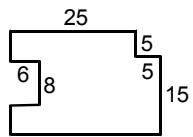
II.



III.



IV.



A. I

B. II

C. III

D. IV

7. The length of rectangle $ABCD$ is longer than its width by 8 cm. If the length of rectangle $ABCD$ is 14 cm, find the area of rectangle $ABCD$.

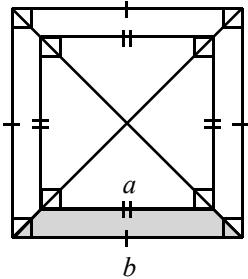
A. 84 cm^2

B. 308 cm^2

C. 176 cm^2

D. 42 cm^2

8. In the figure, $a = 6 \text{ cm}$ and $b = 9 \text{ cm}$. Find the area of the shaded region.



A. 10.25 cm^2

B. 9.75 cm^2

C. 11.25 cm^2

D. 9.25 cm^2

9. Which of the following is/are true?

I. If the perimeters of two rectangles are the same, their areas are also the same.

II. If the width of rectangle A is shorter than that of rectangle B , the area of rectangle A is larger than that of rectangle B .

III. If the product of the length and width of rectangles A and B are the same, their areas are also the same.

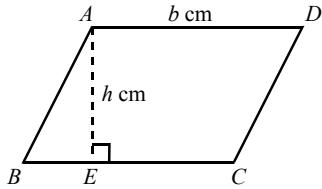
A. II

B. III

C. I and III

D. II and III

10. In the figure, $ABCD$ is a parallelogram. If $h = 9$ and $b = 7$, find the area of parallelogram $ABCD$.



A. 63 cm^2

B. 31.5 cm^2

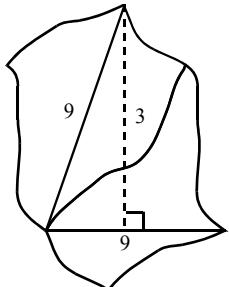
C. 16 cm^2

D. 47.5 cm^2

11. The area and height of a parallelogram are 48 cm^2 and 4 cm respectively. Find the base of the parallelogram.

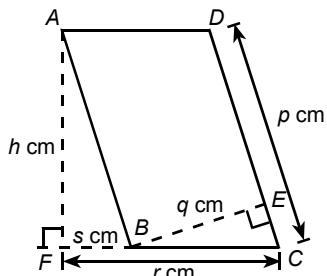
A. 36 cm B. 48 cm C. 12 cm D. 40 cm

12. A parallelogram is divided into four parts and reformed as shown in the figure. Find the area of this figure.



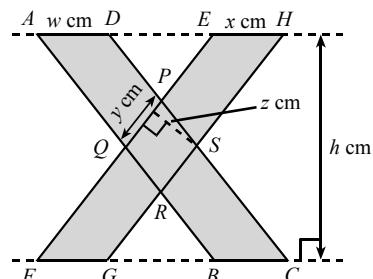
A. 90 B. 32 C. 27 D. 30

13. In the figure, $ABCD$ is a parallelogram with $p = 3$, $q = 2$, $r = 8$ and $s = 2$. Find the value of h .



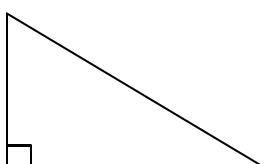
A. 1 B. 2 C. 3 D. 6

14. In the figure, $ABCD$ and $EFGH$ are parallelograms. If $h = 9$, $w = 6$, $x = 5$, $y = 3$ and $z = 2$, find the area of the shaded region.



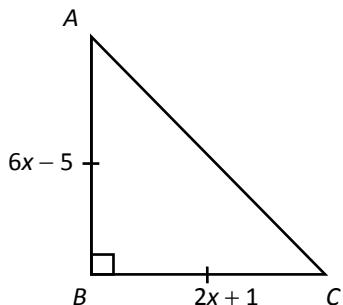
A. 96 cm^2 B. 99 cm^2 C. 85 cm^2 D. 93 cm^2

15. The sides of a triangle are 19.5 cm, 18 cm and 7.5 cm respectively. Find the area of the triangle.



A. 175.5 cm^2 B. 73.125 cm^2 C. 67.5 cm^2 D. 45 cm^2

16. In the figure, $\triangle ABC$ is an isosceles triangle. Find its area.



A. 25 B. 16 C. 8 D. 12.5

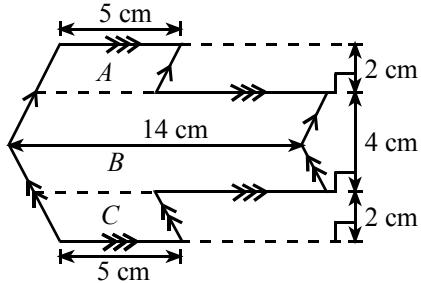
17. If the height of a triangle is 24 cm and it is 2 times the base of the triangle, find the area of the triangle.

A. 72 cm^2 B. 144 cm^2 C. 90 cm^2 D. 36 cm^2

18. The upper side and the height of a trapezium are 10 cm and 8 cm respectively. If the upper side is half the lower side, find the area of the trapezium.

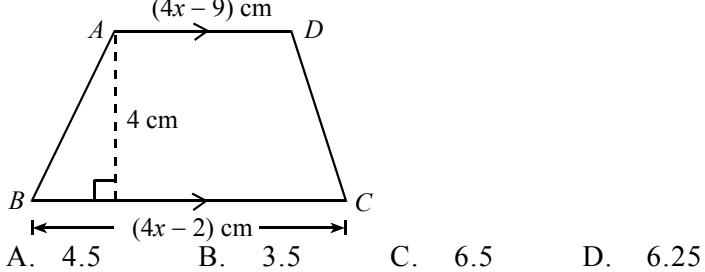
A. 40 cm^2 B. 60 cm^2 C. 80 cm^2 D. 120 cm^2

19. Find the area of the figure.

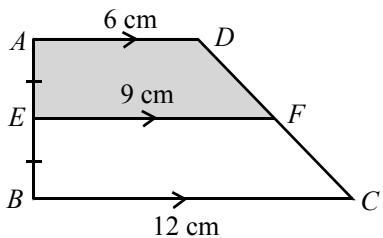


A. 76 cm^2 B. 50 cm^2 C. 78 cm^2 D. 64 cm^2

20. In the figure, $ABCD$ is a trapezium of area 78 cm^2 . Find the value of x .

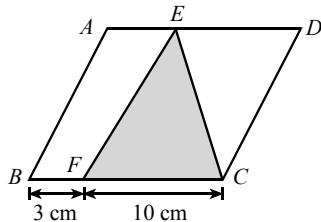


21. In the figure, $AE = EB$, $AD = 6 \text{ cm}$, $EF = 9 \text{ cm}$ and $BC = 12 \text{ cm}$. What is the ratio of the area of the shaded region to the area of trapezium $ABCD$?



A. $\frac{5}{12}$ B. $\frac{5}{6}$ C. $\frac{3}{4}$ D. $\frac{1}{2}$

22. In the figure, $ABCD$ is a parallelogram and its area is 78 cm^2 . If $DE = 3 \text{ cm}$ and $EC = 10 \text{ cm}$, find the area of the shaded region.

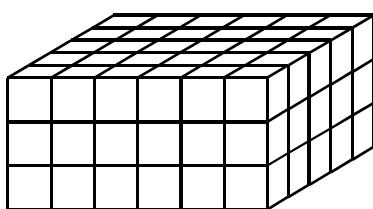


A. 39 cm^2 B. 54 cm^2 C. 30 cm^2 D. 45 cm^2

23. A cup contains 66 cm^3 of water. If $34\,000 \text{ mm}^3$ of water is poured into it, find the volume of water in the cup.

A. $10\,000 \text{ mm}^3$ B. $40\,600 \text{ mm}^3$ C. $100\,000 \text{ mm}^3$ D. $1\,000 \text{ cm}^3$

24. In the figure, the cuboid is made up of several cubes of volume 1 cm^3 . Find the volume of the cuboid.



A. 45 cm^3 B. 63 cm^3 C. 90 cm^3 D. 100 cm^3

25. The length, width and height of a rectangular cargo container are 22 m , 12 m and 5 m respectively. Find the volume of the cargo container.

A. 110 m^3 B. 160 m^3 C. 264 m^3 D. $1\,320 \text{ m}^3$

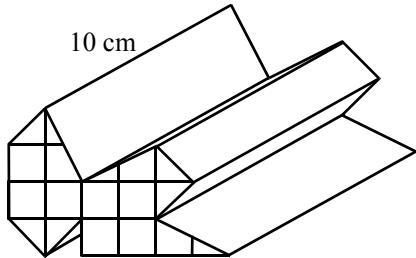
26. The volume of a prism is 324 m^3 . If the height of the prism is 18 m , find the base area of the prism.

A. 18 m^2 B. 20 m^2 C. 22 m^2 D. 24 m^2

27. When 160 cm^3 of water is poured into a container taking the shape of a right prism, the water level is increased by 5 cm. Find the base area of the container.

A. 25 cm^2 B. 32 cm^2 C. 50 cm^2 D. 64 cm^2

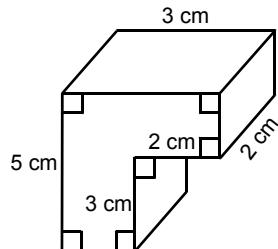
28. In the figure, find the volume of the right prism.



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

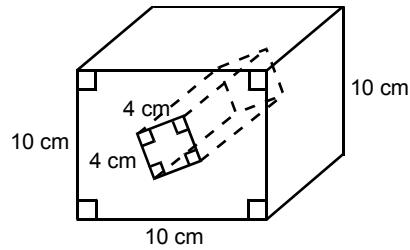
A. 125 cm^3 B. 175 cm^3 C. 225 cm^3 D. 250 cm^3

29. In the figure, find the volume of the right prism.



A. 20 cm^3 B. 18 cm^3 C. 30 cm^3 D. 24 cm^3

30. In the figure, find the volume of the right prism.



A. 800 cm^3 B. 840 cm^3 C. $1\,000 \text{ cm}^3$ D. $1\,160 \text{ cm}^3$

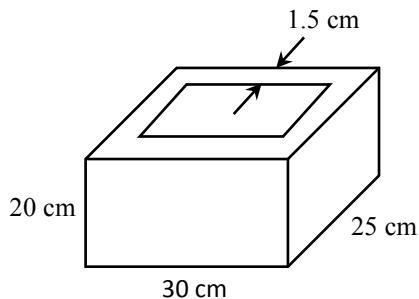
31. If $1\,000 \text{ m}^3$ of water is poured into an empty rectangular container of base $50 \text{ m} \times 10 \text{ m}$, find the depth of the water.

A. 2 m B. 1 m C. 1.5 m D. 2.5 m

32. A right triangular prism-like container with a base area of 25 cm^2 contains some water. If 8 bricks of volume 5 cm^3 each are put into the container until they are totally submerged, find the rise in the water level.

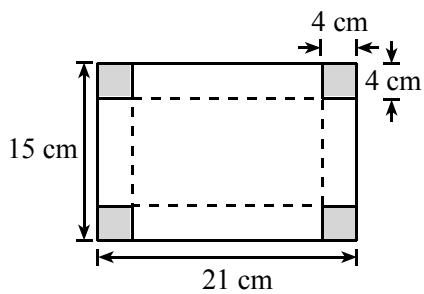
A. 0.625 cm B. 0.8 cm C. 1.6 cm D. 3.125 cm

33. In the figure, an open box taking the shape of cuboid is made of wooden boards of 1.5 cm thick. Find the total volume of wooden boards used.



A. 4011 cm^3 B. 4902 cm^3 C. 5011 cm^3 D. 10989 cm^3

34. The figure shows a rectangular paper of dimensions $21 \text{ cm} \times 15 \text{ cm}$. If a square of sides 4 cm is cut from each corner and then fold to form a rectangular container, find the volume of the container.



A. 91 cm^3 B. 231 cm^3 C. 315 cm^3 D. 364 cm^3

35. The height and length of a rectangular container are 710 cm and 15 cm respectively. If it can contain water of 5.538 m^3 , find the minimum width of the container.

A. 0.000 52 cm B. 0.52 cm C. 520 cm D. 0.052 m

Section A(1)

1. Complete the following.

(a) $24 \text{ cm} = \underline{\hspace{2cm}}$ mm

(b) $54.2 \text{ m} = \underline{\hspace{2cm}}$ cm

(c) $0.65 \text{ km} = \underline{\hspace{2cm}}$ cm

2. Complete the following.

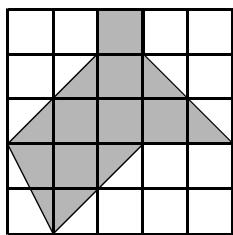
(a) $20 \text{ cm}^2 = \underline{\hspace{2cm}}$ mm²

(b) $2.5 \text{ m}^2 = \underline{\hspace{2cm}}$ cm²

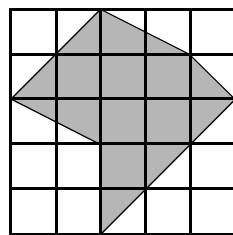
(c) $0.1 \text{ km}^2 = \underline{\hspace{2cm}}$ m²

3. If the area of each square is 1 cm^2 , find the shaded area in each of the following figures.

(a)

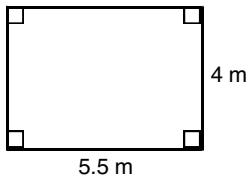


(b)

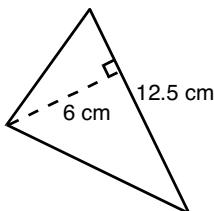


4. Find the area of each of the following figures.

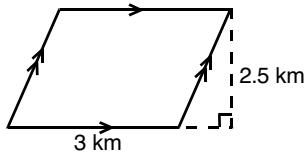
(a)



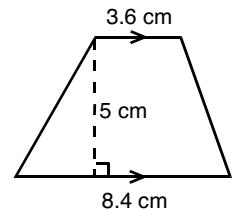
(b)



(c)

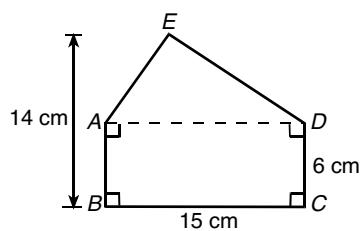


(d)

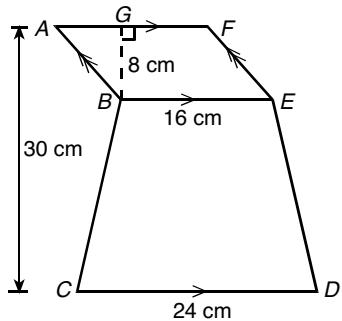


5. Find the area of each of the following figures.

(a)

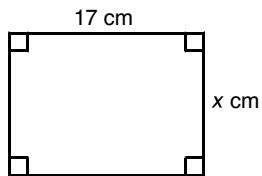


(b)



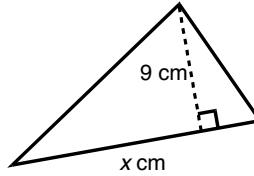
6. Find the value of x in each of the following figures.

(a)



$$\text{Area of rectangle} = 136 \text{ cm}^2$$

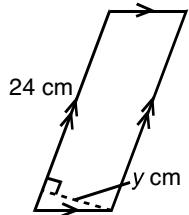
(b)



$$\text{Area of triangle} = 18 \text{ cm}^2$$

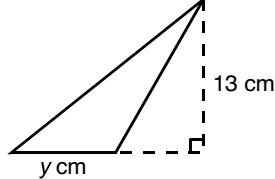
7. Find the value of y in each of the following figures.

(a)



$$\text{Area of parallelogram} = 192 \text{ cm}^2$$

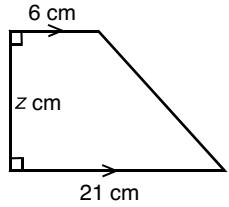
(b)



$$\text{Area of triangle} = 52 \text{ cm}^2$$

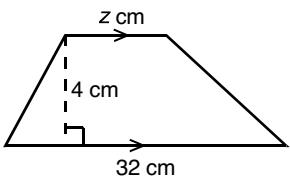
8. Find the value of z in each of the following figures.

(a)



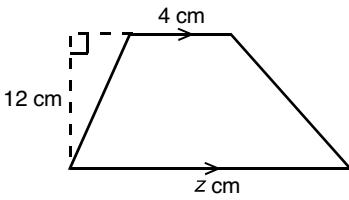
$$\text{Area of trapezium} = 81 \text{ cm}^2$$

(b)



$$\text{Area of trapezium} = 76 \text{ cm}^2$$

(c)



$$\text{Area of trapezium} = 132 \text{ cm}^2$$

9. The length of a tennis court is 40 m and the width is 35 m. Find the area of the tennis court.

10. The area of a curtain is 5 m^2 and the width is 2 m. Find the length of the curtain.

11. Complete the following.

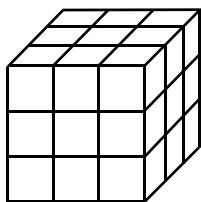
(a) $3\text{ cm}^3 = \underline{\hspace{2cm}}$ mm^3

(b) $1.1\text{ m}^3 = \underline{\hspace{2cm}}$ cm^3

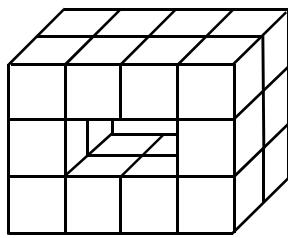
(c) $54000000\text{ m}^3 = \underline{\hspace{2cm}}$ km^3

12. The following solids are made up of several cubes of 1 cm^3 each. Find the volume of each of the following solids.

(a)

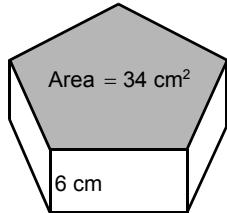


(b)

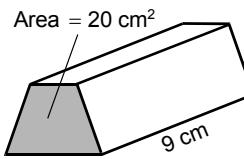


13. Find the volume of each of the following right prisms.

(a)

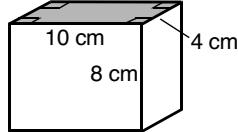


(b)

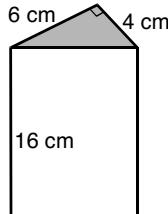


14. Find the volume of each of the following right prisms.

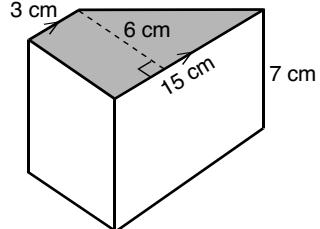
(a)



(b)



(c)

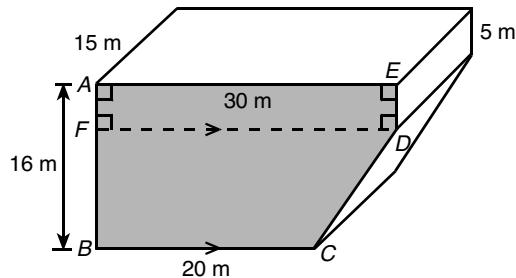


15. Find the volume of a cuboid with length 15 cm, width 6 cm and height 12 cm.

16. If the volume of a right prism is 210 cm^3 and its height is 7 cm, find its base area.

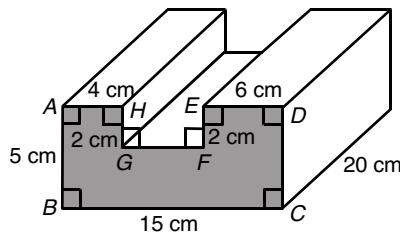
17. The volume of a cuboid is 3150cm^3 . If its height and length are 15 cm and 35 cm respectively, find its width.

18. (a) Find the base area of the following right prism.



(b) Find the volume of the right prism.

19. (a) Find the base area of the following right prism.

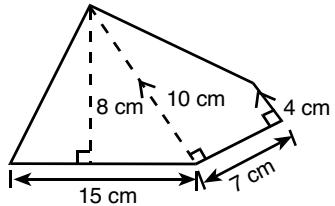


(b) Find the volume of the right prism.

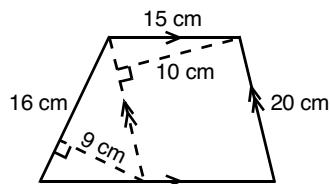
Section A(2)

20. Find the areas of the following figures.

(a)

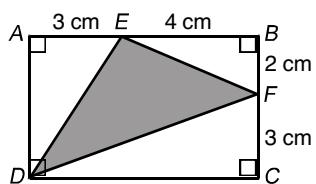


(b)

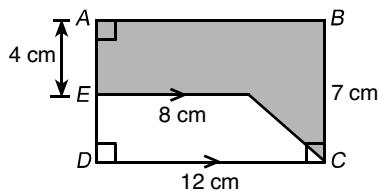


21. Find the area of the shaded region in each of the following figures.

(a)

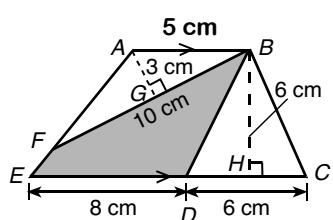


(b)

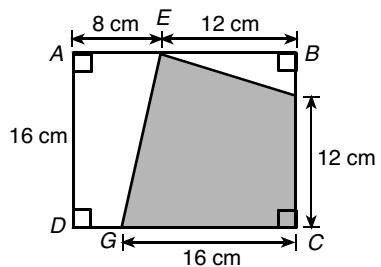


22. Find the area of the shaded region in each of the following figures.

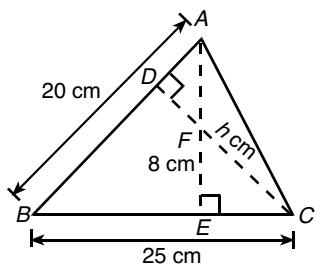
(a)



(b)



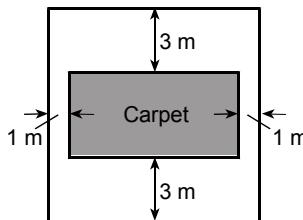
23. The following figure shows $\triangle ABC$.



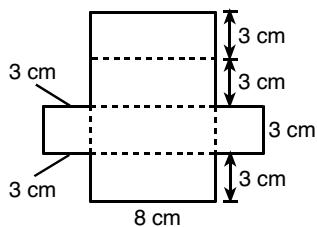
(a) Find the area of $\triangle ABC$.

(b) Find the value of h .

24. A rectangular carpet is put in the centre of a square room. The widths of the remaining paths are 1 m and 3 m as shown in the figure. If the area of the room is 100cm^2 , find the area of the rectangular carpet.

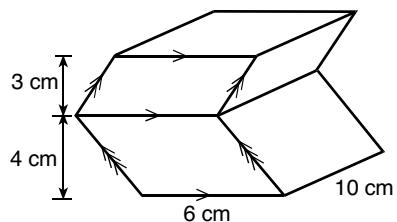


25. If a piece of paper, with shape and dimensions as shown in the figure below, is folded along the dotted lines to form a rectangular box, find the volume of the rectangular box.

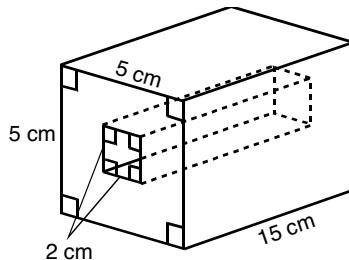


26. Find the volumes of the following right prisms.

(a)

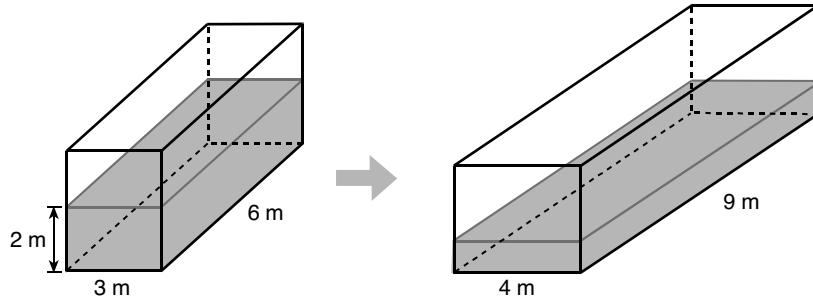


(b)

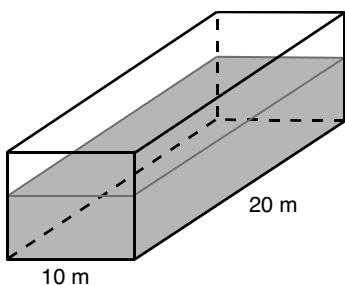


27. The volume of a right prism with a parallelogram base is 360 m^3 . If the height of the right prism is 12 m and the base of the parallelogram is 6 m, find the height of the parallelogram.

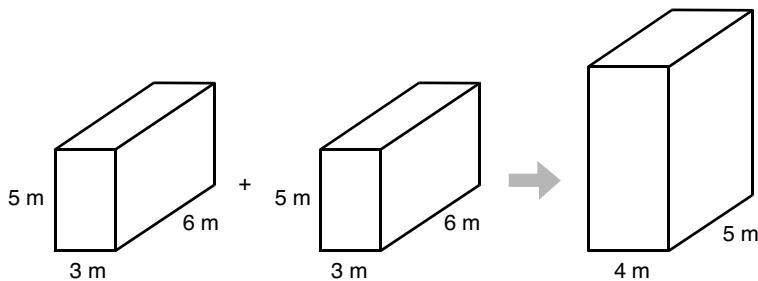
28. The following figure shows the dimensions of the water in a rectangular tank. If the water is poured into another rectangular tank with a base of 9 m by 4 m, find the depth of water in the new rectangular tank.



29. 1000m^3 of water is poured into a rectangular tank with a base of 20 m by 10 m . If no water is spilled out, find the depth of water in the rectangular tank.

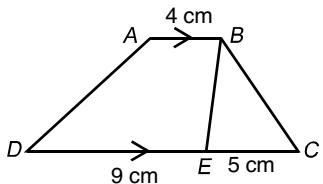


30. If two identical metallic rectangular prisms are melted to form a new rectangular prism with base 5 m by 4 m , find the height of the new prism.



Section B

31. In the figure below, the area of $\triangle BCE$ is 15 cm^2 . Find the area of trapezium $ABCD$.



32. A metallic right prism with volume 0.01m^3 is melted and recast to form circular coins with base area 5cm^2 and height 0.1 cm each. How many coins are formed?

33. A rectangular tank with base 10 m by 4 m contains 240m^3 of water.

(a) Find the depth of water.

(b) An extra 600 m^3 of water is poured into the rectangular tank, find the rise in water level in the rectangular tank.