



Dr Lai Chee Chong Leong Weng Kee General Editor: Sin Kwai Meng

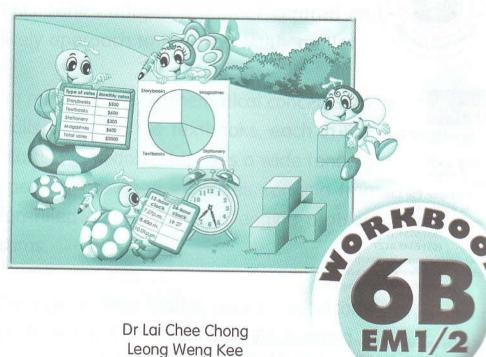


Name:

Class:



Part One



Dr Lai Chee Chong Leong Weng Kee General Editor: Sin Kwai Meng

Part One



Preface



In Step Maths is a series of textbooks and accompanying workbooks specially written to meet the mathematical needs of primary school pupils.

This series adopts a learner-centred and lively approach to teaching Mathematics.

To reinforce the mathematical concepts and skills taught in the textbooks, each In Step Maths workbook comprises a wide range of specially designed exercises, ranging from fun-filled activities to challenging problem sums.



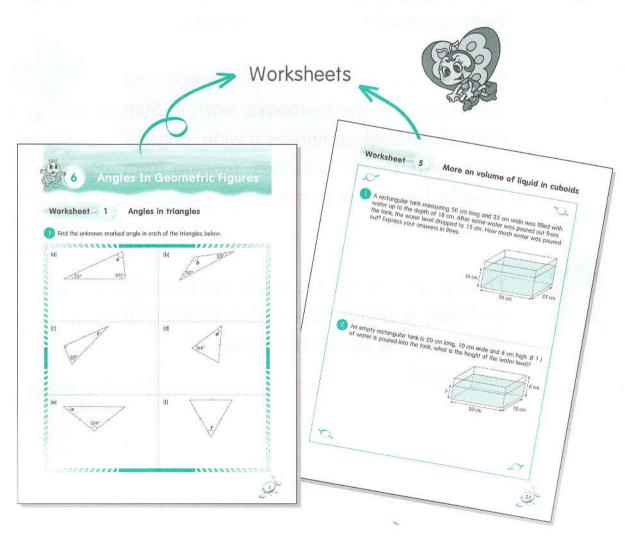


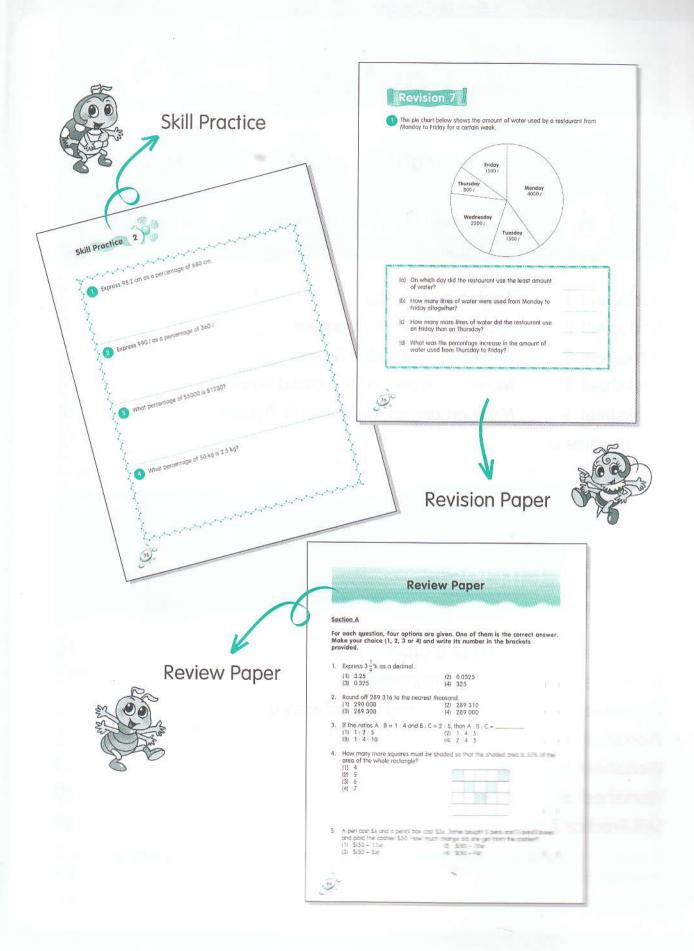
Through In Step Maths, pupils can become proficient in Mathematics while learning to appreciate the beauty and power of the subject.



About The Book

This workbook adopts a structured approach in reinforcing the concepts and skills learnt in the textbook. Practice comes in the form of worksheets, skill practices, revision papers and examination papers. Each worksheet focuses on specific skills. A Skill Practice is found at the end of every chapter to consolidate what has been learnt in that chapter. The workbook also contains revision and examination papers to provide for further practice and to assess pupils' understanding.





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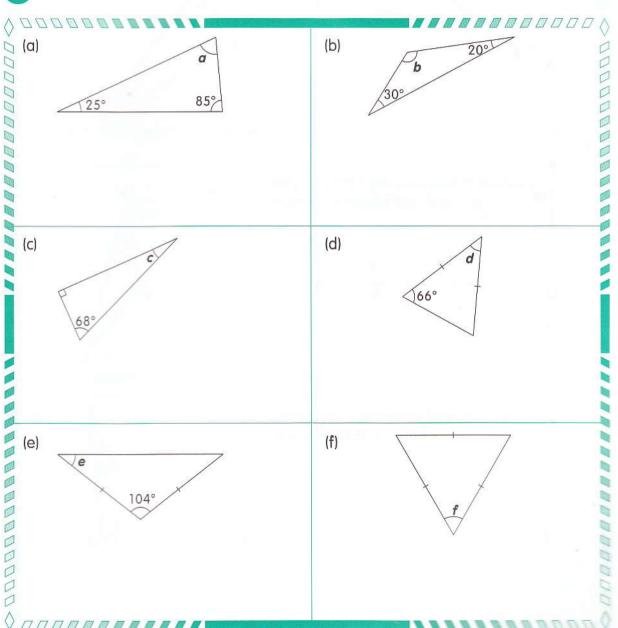
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Angles in Geometric Figures

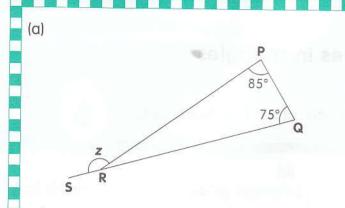
Worksheet 1 Angles in triangles

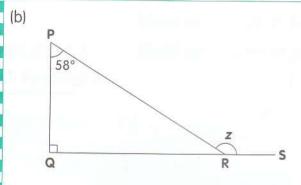
Find the unknown marked angle in each of the triangles below.

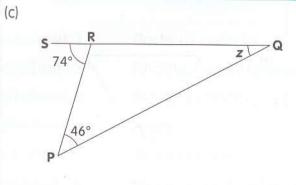




2 In each of the figures below, QRS is a straight line. Find $\angle z$.



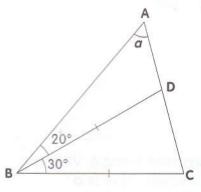




More on angles in triangles

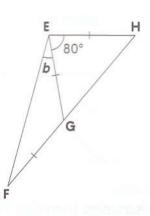
1) Find the unknown marked angle(s) in each of the following figures.

(a)



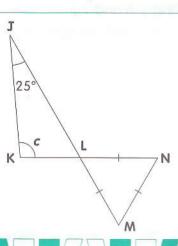
BCD is an isosceles triangle. ADC is a straight line. Find $\angle a$.

(b)

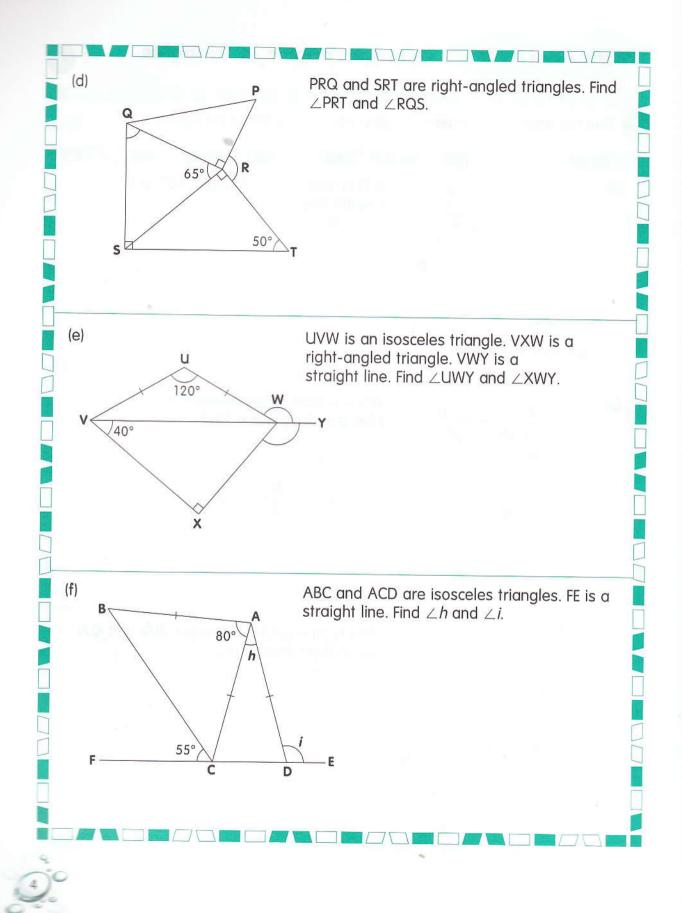


EFG and EGH are isosceles triangles. FGH is a straight line. Find $\angle b$.

(c)



LMN is an equilateral triangle. JLM and KLN are straight lines. Find $\angle c$.

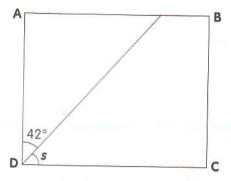


Worksheet 3

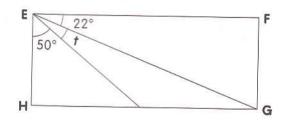
Angles in four-sided figures

1 Find the unknown marked angle in each of the following figures.

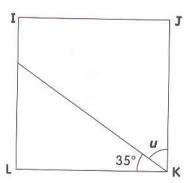




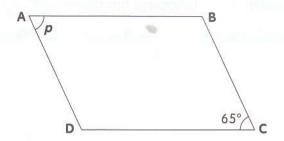
(b) EFGH is a rectangle. Find $\angle t$.



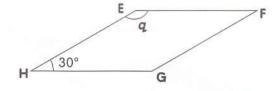
(c) IJKL is a square. Find $\angle u$.



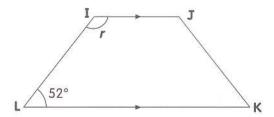
(d) ABCD is a parallelogram. Find $\angle p$.



(e) EFGH is a rhombus. Find $\angle q$.

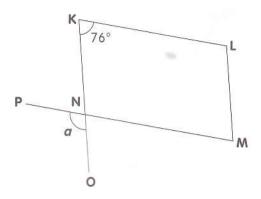


(f) IJKL is a trapezium. Find $\angle r$.

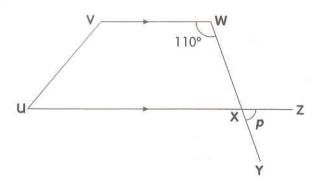




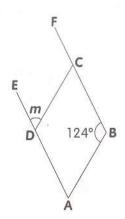
2 KLMN is a parallelogram. KNO and MNP are straight lines. Find $\angle a$.



 \bigcirc UVWX is a trapezium. UXZ and WXY are straight lines. Find $\angle p$.

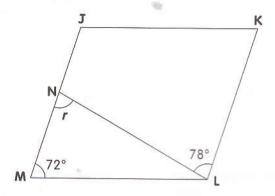


4) ABCD is a rhombus. BCF and ADE are straight lines. Find $\angle m$.

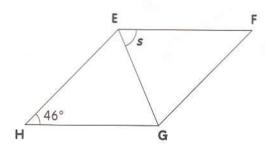


Worksheet 4 More on angles in four-sided figures

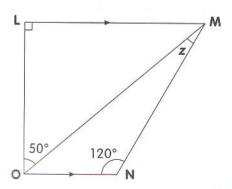
1 JKLM is a parallelogram. Find $\angle r$.



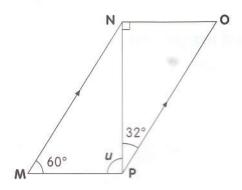
2 EFGH is a rhombus. Find $\angle s$.



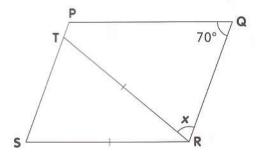
3 LMNO is a trapezium. Find $\angle z$.



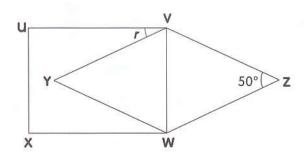
4 MNOP is a trapezium. Find $\angle u$.



5 PQRS is a parallelogram. RTS is an isosceles triangle. Find $\angle x$.



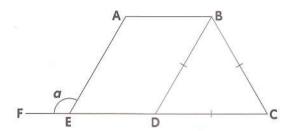
6 UVWX is a rectangle. VYWZ is a rhombus. Find $\angle r$.



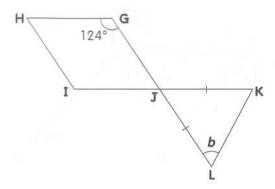


Worksheet 5 More on angles in geometric figures

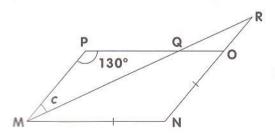
1) ABDE is a parallelogram. BCD is an equilateral triangle. Find $\angle a$.



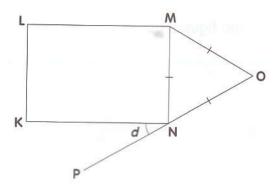
2 GHIJ is a rhombus. JKL is an isosceles triangle. Find $\angle b$.



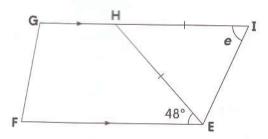
3 MNOP is a parallelogram. MNR is an isosceles triangle. Find $\angle c$.



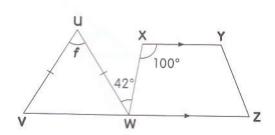
KLMN is a rectangle. MNO is an equilateral triangle. PNO is a straight line. Find $\angle d$.



 5 EFGH is a trapezium. EHI is an isosceles triangle. GHI is a straight. Find $\angle e$.

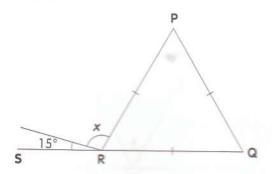


6 UVW is an isosceles triangle. WXYZ is a trapezium. VWZ is a straight line. Find $\angle f$.

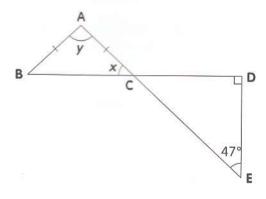


1) Find the unknown marked angle in each of the figures below.

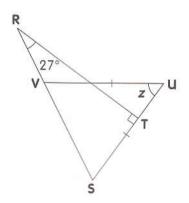
(a) (b) 158° (c) 120% 100° PQR is an equilateral triangle. QRS is a straight line. Find $\angle x$.



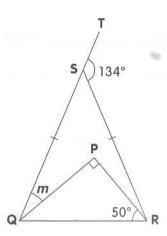
3 BCD and ACE are straight lines. Find $\angle x$ and $\angle y$.



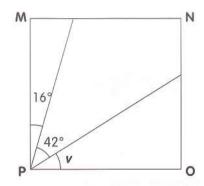
RST is a right-angled triangle. SUV is an isosceles triangle. Find $\angle z$.



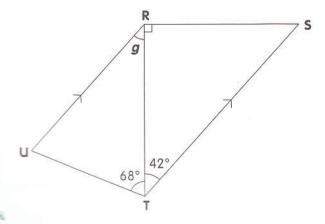
SQR is an isosceles triangle. QPR is a right-angled triangle. QST is a straight line. Find $\angle m$.



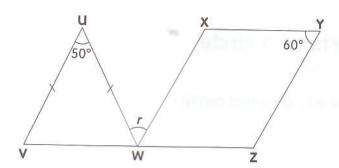
6 MNOP is a square. Find $\angle v$.



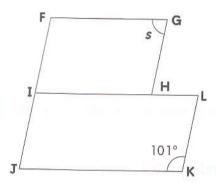
7 RSTU is a trapezium. Find $\angle g$.



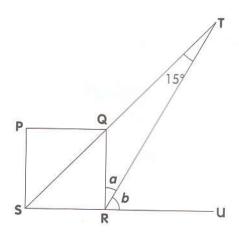
8 UVW is an isosceles triangle. WXYZ is a parallelogram. VWZ is a straight line. Find $\angle r$.



9 FGHI and IJKL are two parallelograms. FIJ is a straight line. Find $\angle s$.



10 PQRS is a square. SQT and SRU are straight lines. Find $\angle a$ and $\angle b$.





Worksheet 1 Parts of a circle

1 Draw a circle with the given line as radius and centre O.

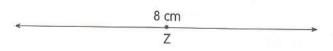
2 Draw a circle with the given line as diameter and centre A.



3 Draw a circle of radius 3 cm and label the centre as X.



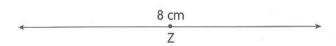
4 Draw a circle of diameter 8 cm and label the centre as Z.



3 Draw a circle of radius 3 cm and label the centre as X.

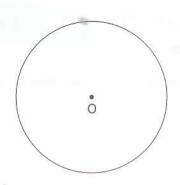


4 Draw a circle of diameter 8 cm and label the centre as Z.

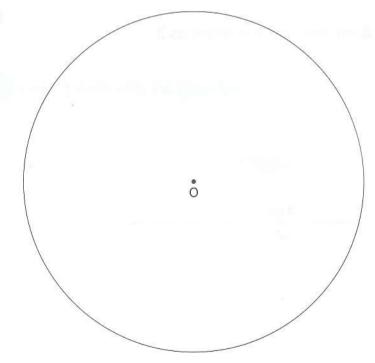




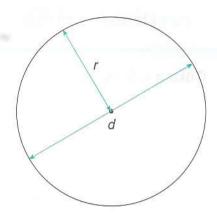
(a)



(b)



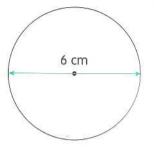
In the circle below, r represents the radius and d represents the diameter. Complete the table below.



	Radius, r	Diameter, d
	4 cm	
0		19 cm
0	13 cm	
	25.5 m	
		68 m

The circles below are not drawn to scale. Find their circumferences.

(a)



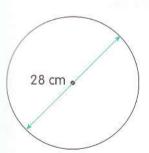
(Take $\pi = 3.14$)

(b)



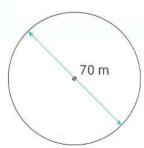
 $(Take \pi = 3.14)$

(c)



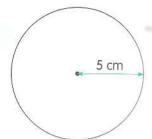
(Take $\pi = \frac{22}{7}$)

(d)



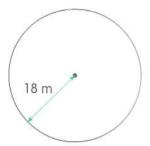
(Take $\pi = \frac{22}{7}$)

(a)



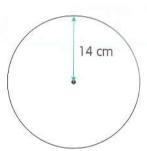
(Take $\pi = 3.14$)

(b)



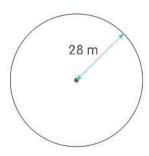
(Take $\pi = 3.14$)

(c)



(Take $\pi = \frac{22}{7}$)

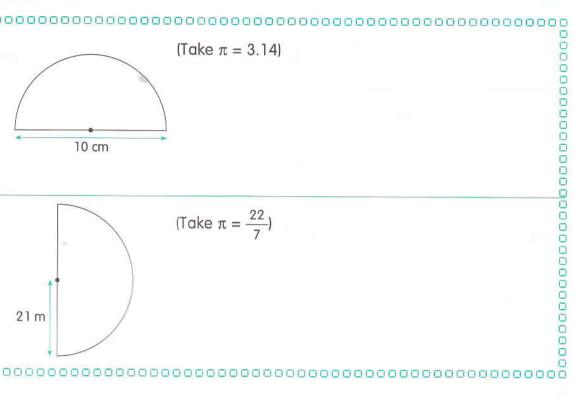
(d)



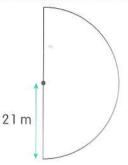
(Take $\pi = \frac{22}{7}$)

The semicircles below are not drawn to scale. Find their perimeters.

(a)

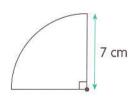


(b)



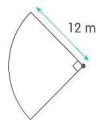
The quadrants below are not drawn to scale. Find their perimeters.

(a)



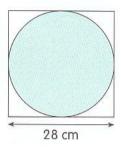
(Take $\pi = \frac{22}{7}$)

(b)

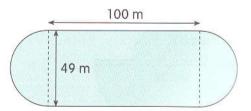


(Take $\pi = 3.14$)

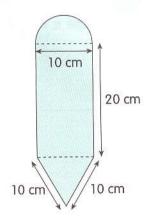
A circle is dro $(Take \pi = \frac{22}{7})$ A field is in the find the perind the A circle is drawn within a square. Find the circumference of the circle. $(Take \pi = \frac{22}{7})$



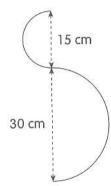
A field is in the shape of a rectangle with semicircles at both ends. Find the perimeter of the field. (Take $\pi = \frac{22}{7}$)



A piece of cardboard had the shape of a rectangle with a semicircle at one end and a triangle at the other end. Taufik used a piece of string to stick around the perimeter of the cardboard. What was the length of the piece of string that he used? (Take $\pi = 3.14$)



A piece of wire is bent to form an 'S' shape as shown below. Find the total length of the piece of wire. (Take $\pi=3.14$)



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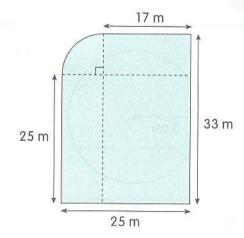
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Mr Lim wants to put a fence around his plot of land as shown below. Find the total length of fencing he needs. (Take $\pi = 3.14$)

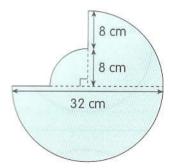
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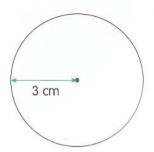


Su Wen cut out a piece of coloured paper as shown below. It had the shape of 2 quadrants and a semicircle. Find the perimeter of the piece of coloured paper that Su Wen cut. (Take $\pi = 3.14$)



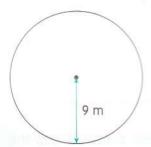
The circles below are not drawn to scale. Find their areas.

(a)



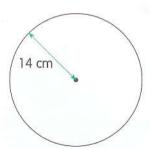
(Take $\pi = 3.14$)

(b)



(Take $\pi = 3.14$)

(c)



 $(\text{Take } \pi = \frac{22}{7})$

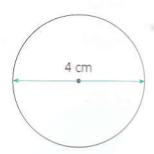
(d)



(Take $\pi = \frac{22}{7}$)

2 The circles below are not drawn to scale. Find their areas.

(a)



(Take $\pi = 3.14$)

(b)



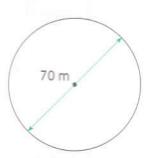
(Take $\pi = 3.14$)

(c)



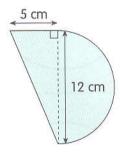
 $(\text{Take }\pi = \frac{22}{7})$

(d)

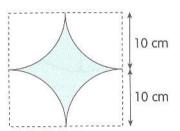


(Take $\pi = \frac{22}{7}$)

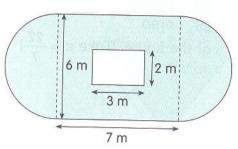
The figure below is made up of a right-angled triangle and a semicircle. Find the total area of the figure. (Take $\pi=3.14$)



Raju cuts away four quadrants from a piece of square plastic sheet. What is the area of the remaining piece of plastic sheet? (Take $\pi = 3.14$)



- 3 The floor plan of a room is made up of 2 semicircles and a rectangle as shown below. A rectangular carpet, measuring 2 m by 3 m, is placed on the floor of the room.
 - (a) Find the area of the floor.
 - (b) Find the area of the floor that is not covered by the carpet. (Take $\pi=3.14$)

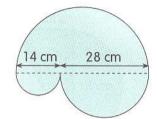


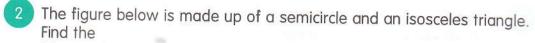


The figure below is made up of three semicircles. Find the

- perimeter
- (b) area

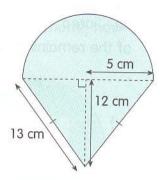
of the figure. (Take $\pi = \frac{22}{7}$)





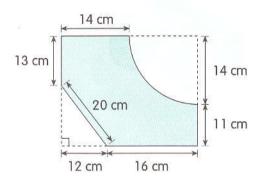
- (a) perimeter
- (b) area

of the figure. (Take $\pi = 3.14$)



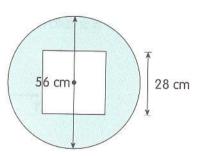
- 3 Lee Meng cut a triangle and a quadrant from a rectangular piece of cloth as shown below. Find the
 - (a) perimeter
 - (b) area

of the remaining piece of cloth. (Take $\pi = \frac{22}{7}$)

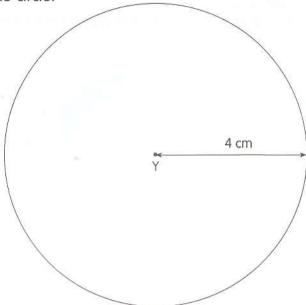


- Mr Low bought a circular sheet of metal with a square of side 28 cm cut from its centre as shown below.
 - Find the area of the sheet of metal.
 - If the metal sheet cost 5 cents per square centimetre, how much (b) did Mr Low pay? (Take $\pi = \frac{22}{7}$)

$$(\text{Take } \pi = \frac{22}{7})$$



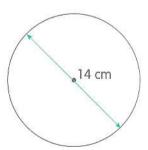
Draw a circle of radius 4 cm and label the centre as Y. Measure the diameter of the circle.



Diameter = _____ cm

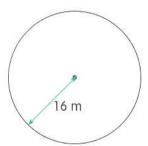
The circles below are not drawn to scale. Find their circumferences.

(a)



(Take
$$\pi = \frac{22}{7}$$
)

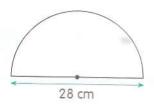
(b)



(Take $\pi = 3.14$)

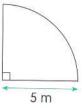
3 Find the perimeters of the semicircle and quadrant below.

(a)



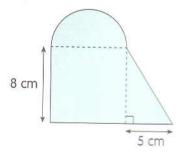
 $(Take \pi = \frac{22}{7})$

(b)

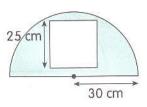


(Take $\pi = 3.14$)

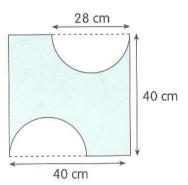
The figure below is made up of a semicircle, a square and a triangle. Find the total area of the figure. (Take $\pi=3.14$)



The figure below shows a semicircle and a square. The radius of the semicircle is 30 cm. Find the area of the shaded part. (Take $\pi = 3.14$)

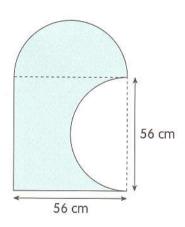


The figure below shows a square piece of paper with 2 similar semicircular portions cut from it. What fraction of the paper is left over? (Take $\pi = \frac{22}{7}$)



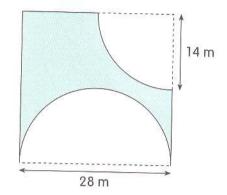
- 7 Lilian cut off a semicircular piece of paper from a square cardboard of side 56 cm. She then pasted the semicircular piece of paper at one side of the square to form a new figure. Find the
 - (a) perimeter
 - (b) area

of the new figure. (Take $\pi = \frac{22}{7}$)



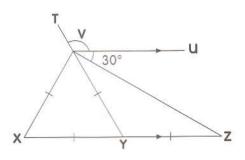
- A semicircle and a quadrant are cut away from a square piece of marble as shown in the figure below. Find the
 - (a) perimeter
 - (b) area

of the remaining piece of marble. (Take $\pi = \frac{22}{7}$)

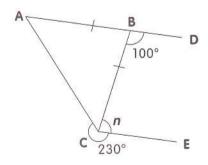


Revision 5

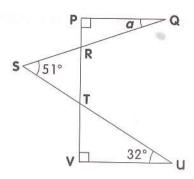
VXY is an equilateral triangle and VYZ is an isosceles triangle. YVT is a straight line and \angle UVZ = 30°. Find \angle TVU.



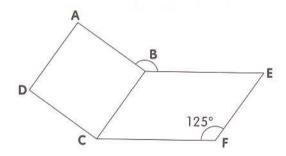
In the figure below, ABC is an isosceles triangle. ABD is a straight line. \angle DBC = 100°. Find \angle n.



In the figure below, PV is a straight line. PQR and TUV are right-angled triangles. \angle RST = 51° and \angle TUV = 32°. Find \angle a.

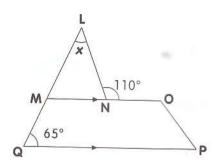


4 ABCD is a square. BEFC is a parallelogram. \angle CFE = 125°. Find \angle ABE.

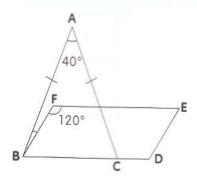




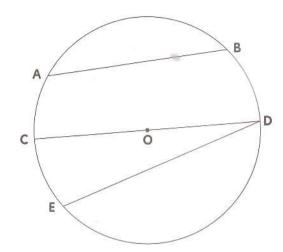
MOPQ is a trapezium. LMN is a triangle. \angle MQP = 65°, \angle LNO = 110°. Find \angle x



6 ABC is an isosceles triangle. BFED is a parallelogram. Find \angle ABF.



7 Identify and name the following parts of the circle shown.



Centre:

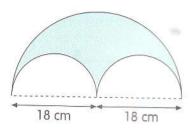
Radius:

Diameter: _____

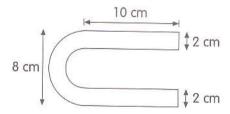
8 Complete the following table. (Take $\pi = \frac{22}{7}$)

Radius	Diameter	Circumference	Area
	14 mm		
14 cm			
	56 cm		
42 m			

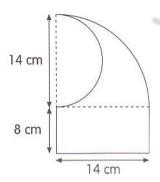
The figure is made up of 3 semicircles. Find the perimeter of the shaded region in terms of π .



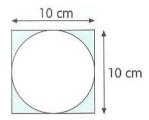
10 The figure below shows a horseshoe magnet. Find its perimeter. (Take $\pi = 3.14$)

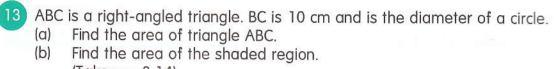


A wire was bent to form the shape shown below. The shape was made up of a semicircle, a quadrant and a rectangle. Find the length of the wire used to obtain the shape. (Take $\pi = \frac{22}{7}$)

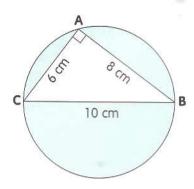


12 Find the area of the shaded part in the figure below. (Take $\pi = 3.14$)

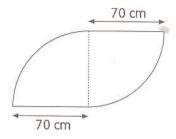




(Take $\pi = 3.14$)



The figure below is made up of 2 quadrants of radius 70 cm. Find the area and the perimeter of the figure. (Take $\pi = \frac{22}{7}$)

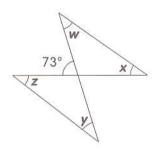


- 15 A piece of paper is 50 cm long and 20 cm wide.
 - (a) How many whole circles of diameter 10 cm each can be cut from this piece of paper?
 - (b) What is the area of the remaining piece of paper? (Take $\pi = 3.14$)

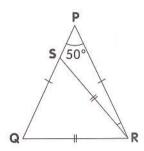


- 1) ABC is a triangle where the 3 angles are in the ratio 1 : 2 : 3.
 - (a) Find the 3 angles.
 - (b) What type of triangle is ABC?

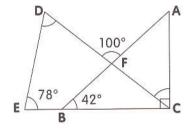
2 Find the angle sum $\angle w + \angle x + \angle y + \angle z$ in the figure below.



 \bigcirc PQR and QRS are isosceles triangles. Find \angle SRP.

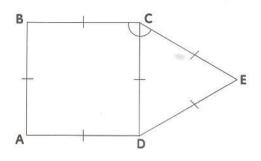


4 ABC is a right-angled triangle. EBC is a straight line. Find \angle ACF and \angle EDC.

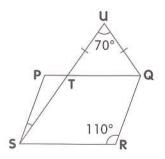




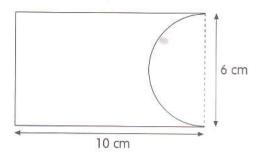
 5 ABCD is a square and CDE is an equilateral triangle. Find \angle BCE.



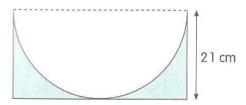
PQRS is a parallelogram. UTQ is an isosceles triangle. UTS is a straight line. \angle TUQ = 70° and \angle QRS = 110°. Find \angle PST.



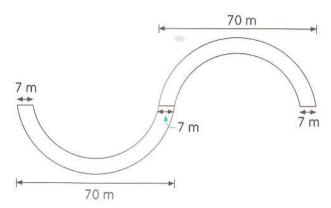
7 The figure is made up of a semicircle cut from a rectangular at one end. Find the perimeter of the figure. (Take $\pi = 3.14$)



8 Find the perimeter of the shaded region in the figure shown below. (Take $\pi = \frac{22}{7}$)



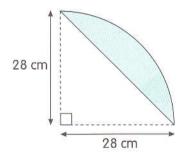
The figure is made up of 4 semicircles joined by 2 lines, each of the length 7 m. Find the perimeter of the figure shown below. (Take $\pi = \frac{22}{7}$)



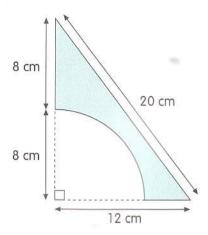
A circle of radius 12 cm is divided into 3 equal parts. What is the area of each part? (Take $\pi=3.14$)



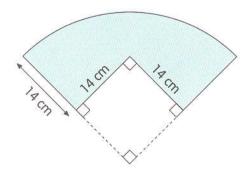
Find the area of the shaded part. (Take $\pi = \frac{22}{7}$)



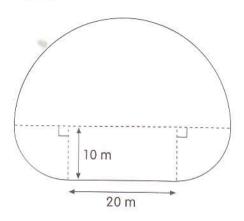
12 Find the area of the shaded part. (Take $\pi = 3.14$)



A square piece of paper of side 14 cm is placed on top of a cardboard in the shape of a quadrant. Find the area of the cardboard not covered by the piece of paper. (Take $\pi = \frac{22}{7}$)



A farmer has a plot of land in the shape shown below. The shape is made up of a big semicircle, 2 small quadrants and a rectangle. What is the area of the plot of land? (Take $\pi = 3.14$)



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