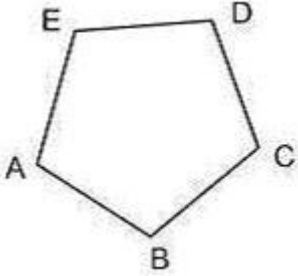


3. Understanding Quadrilaterals

Q 1 Name the regular polygon with 8 sides.

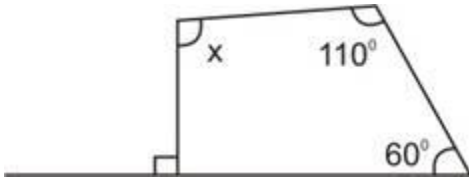
Mark (1)

Q 2 Find the number of diagonals in the figure given below.



Mark (1)

Q 3 Find x in the following figure.



Mark (1)

Q 4 Find the measure of each exterior angle of a regular polygon of 9 sides.

Mark (1)

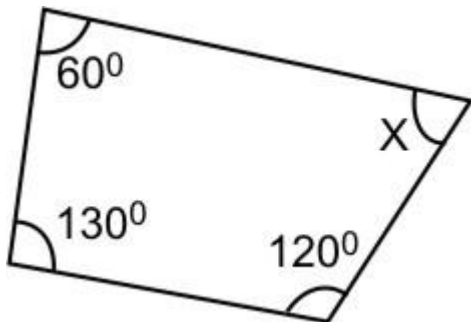
Q 5 Name the quadrilateral whose diagonals are perpendicular bisector of each other.

Mark (1)

Q 6 Name a quadrilateral with exactly one pair of parallel sides.

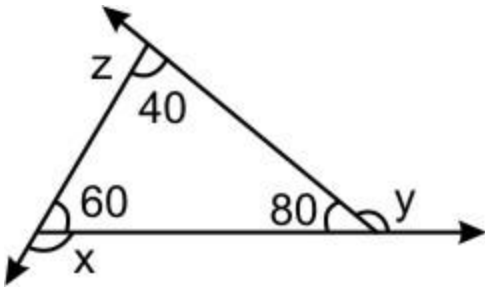
Mark (1)

Q 7 Find x in the following figure.



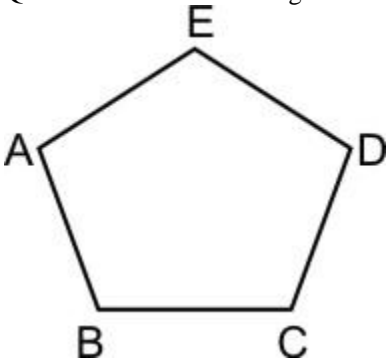
Marks (2)

Q 8 Use the figure given below to find $x + y + z$.



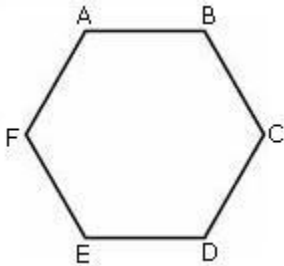
Marks (2)

Q 9 Find the sum of the angles in the figure given below.



Marks (2)

Q 10 Find the sum of the angles in the following figure.

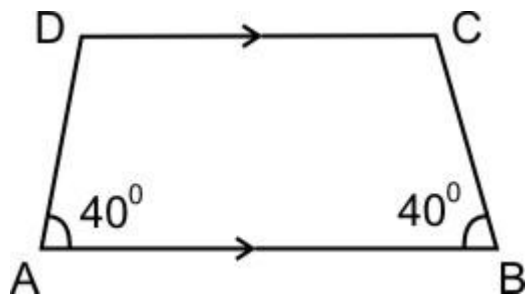


Marks (2)

Q 11 Find the number of sides of a regular polygon whose each exterior angle has a measure of 60° .

Marks (2)

Q 12 ABCD is a trapezium in which $AB \parallel DC$. If $\angle A = \angle B = 40^\circ$, find the measures of other two angles.

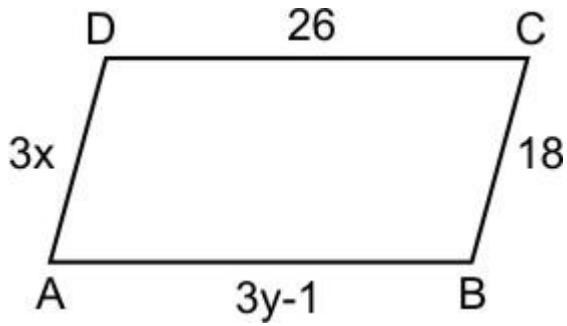


Marks (2)

Q 13 The length of two adjacent sides of a parallelogram are 4 cm and 3 cm. Find its perimeter.

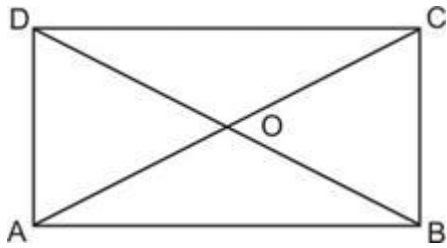
Marks (2)

Q 14 In the following figure, given a parallelogram ABCD. Find x and y .



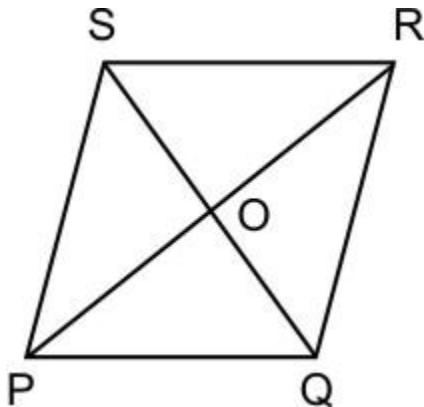
Marks (2)

Q 15 The diagonals AC and BD of rectangle ABCD intersect each other at point O. If $OA = 5$ cm, find AC and BD.



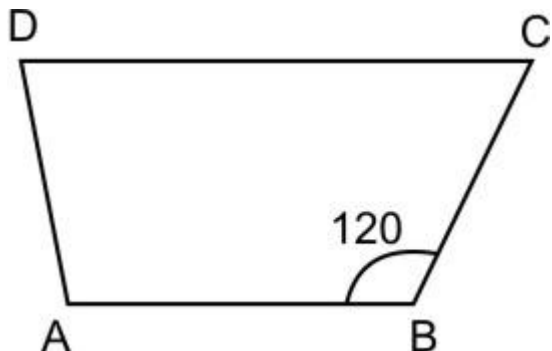
Marks (2)

Q 16 In parallelogram PQRS, given that $OQ = 4$ cm, and PR is 5 more than SQ. Find OP.



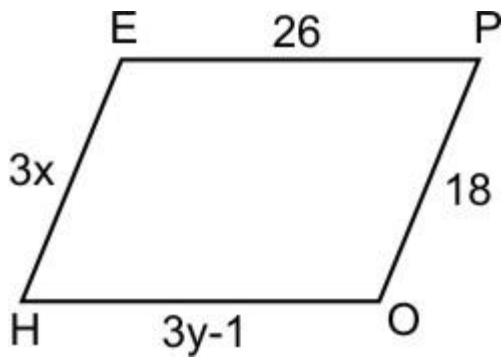
Marks (2)

Q 17 Given ABCD is a trapezium. Find $m\angle C$.



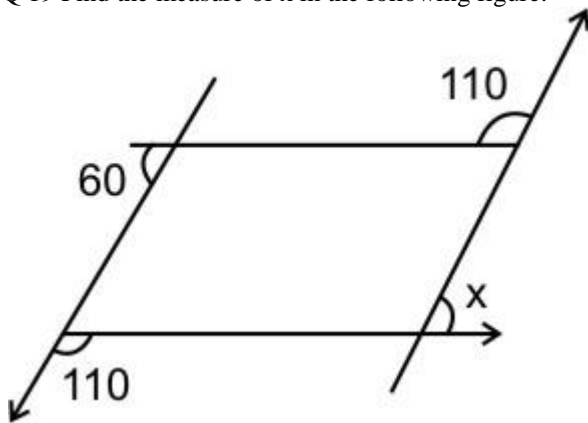
Marks (2)

Q 18 In parallelogram HOPE, find x and y.



Marks (2)

Q 19 Find the measure of x in the following figure.



Marks (2)

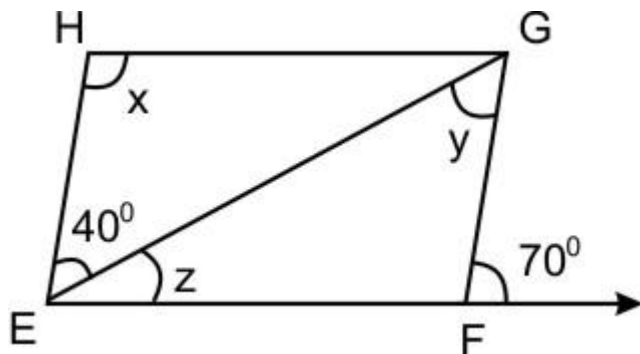
Q 20 The measure of two adjacent angles of a parallelogram are in the ratio of 2 : 3. Find the measure of each of the angles of the parallelogram.

Marks (3)

Q 21 Two adjacent angles of a parallelogram have equal measure. Find the measure of each of the angles of the parallelogram.

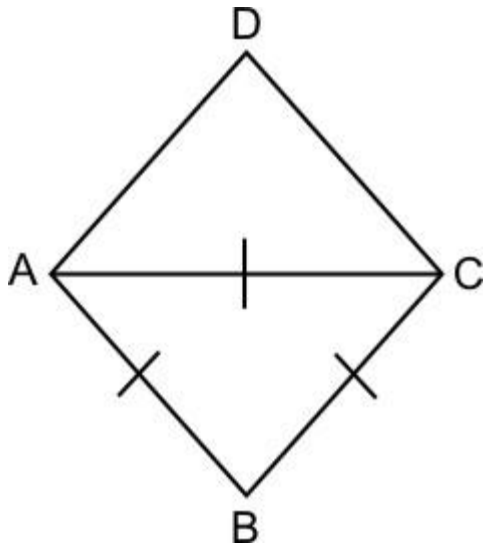
Marks (3)

Q 22 EFGH is a parallelogram. Find the angle measures x, y and z.



Marks (3)

Q 23 The diagonal AC of rhombus ABCD is equal to one of its sides BC. Find all the angles of rhombus.

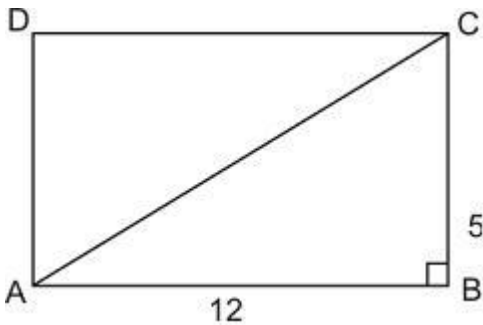


Marks (3)

Q 24 Two adjacent angles of a parallelogram are $(3x - 4)$ and $(3x + 10)$. Find the angles of the parallelogram.

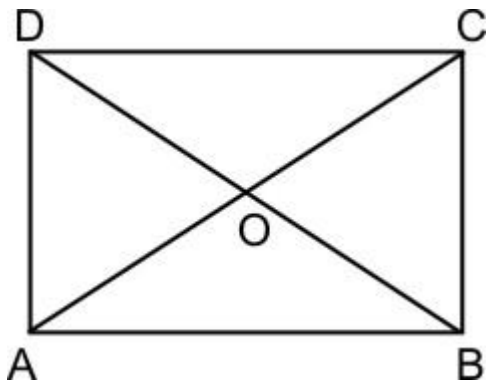
Marks (3)

Q 25 ABCD is a rectangle with $AB = 12$ and $BC = 5$. Find AC.



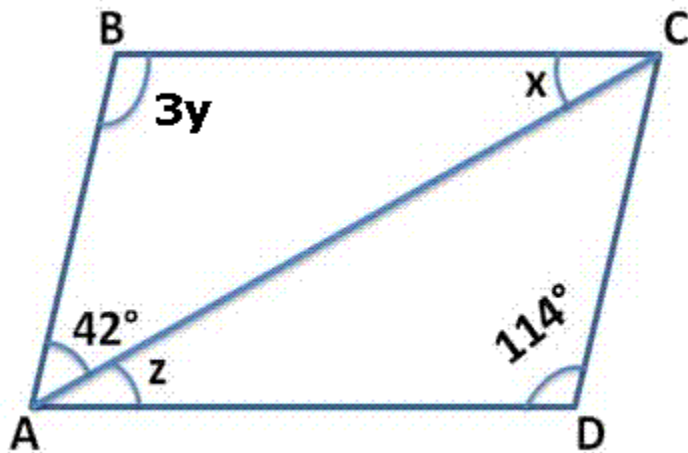
Marks (3)

Q 26 In the following figure, ABCD is a rectangle and its diagonals meet at O. Find x, if $OA = 2x + 4$ and $OD = 3x + 1$. Also find BD.



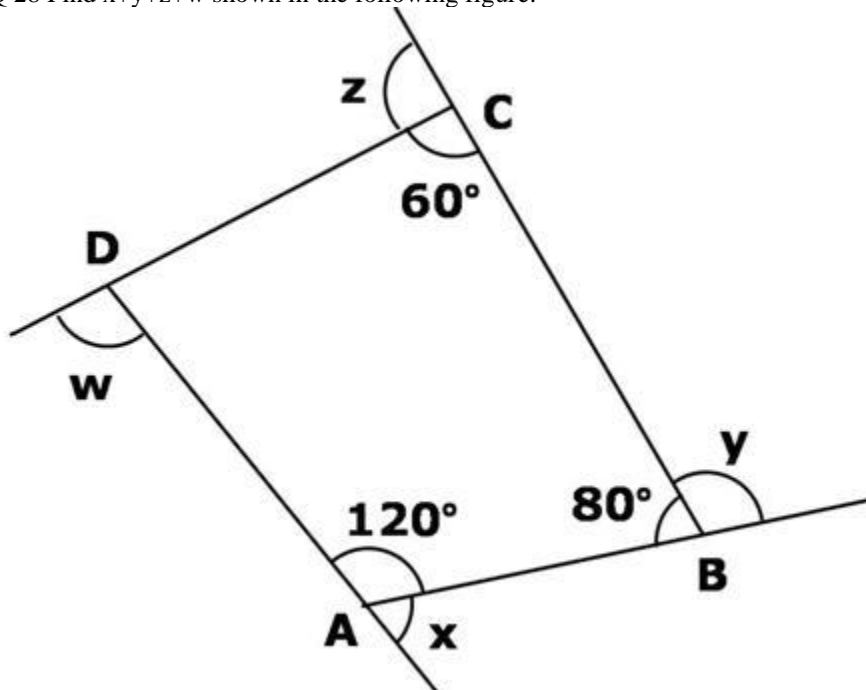
Marks (3)

Q 27 Find the values of x , y and z in a parallelogram ABCD shown in the figure given below.



Marks (4)

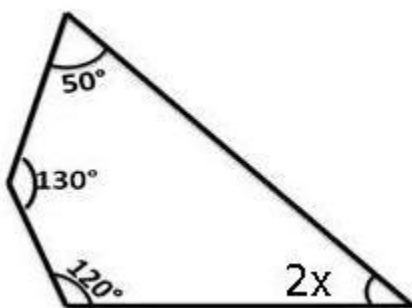
Q 28 Find $x+y+z+w$ shown in the following figure:



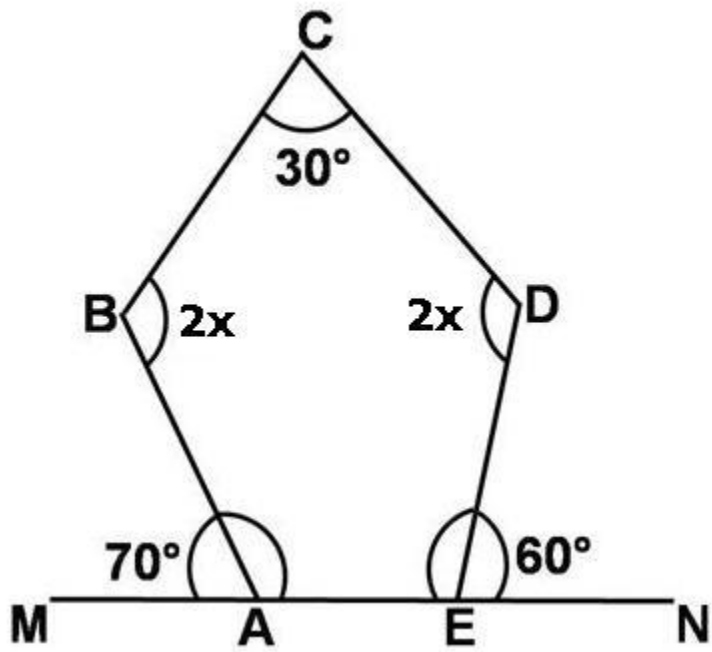
Marks (4)

Q 29 Find the measure of angle x in the following figure:

(i)



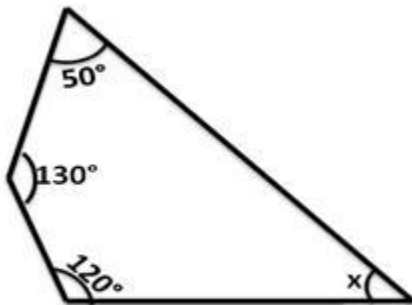
(ii)



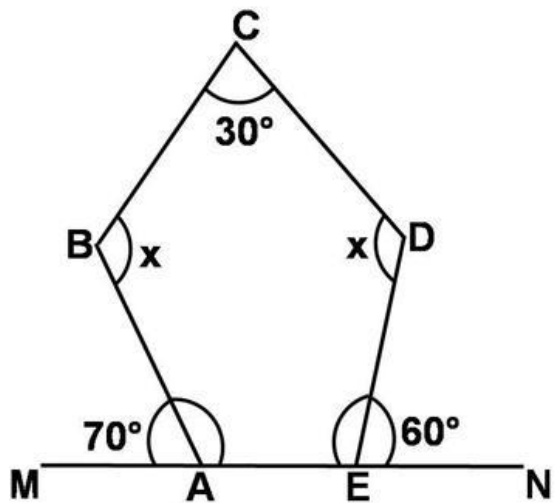
Marks (4)

Q 30 Find the measure of angle x in the following figure:

(i)

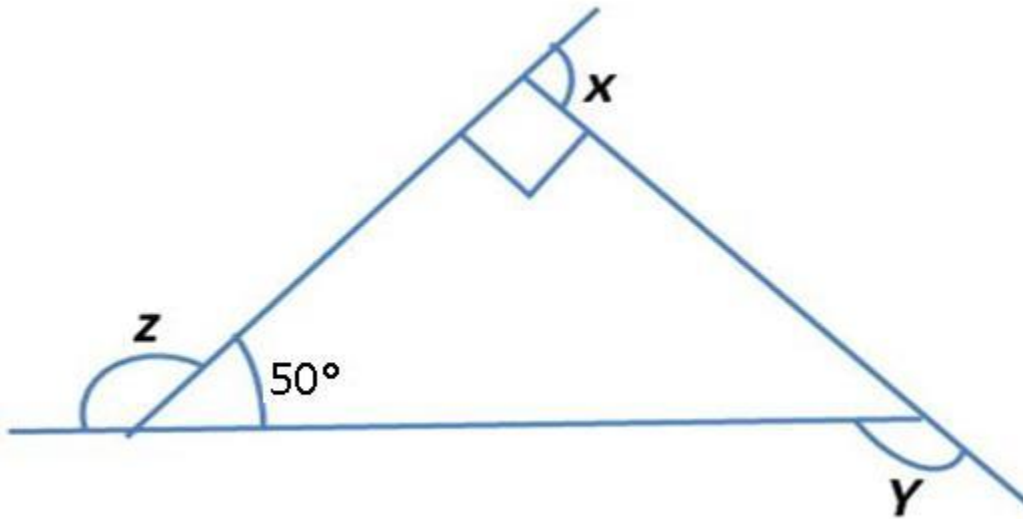


(ii)



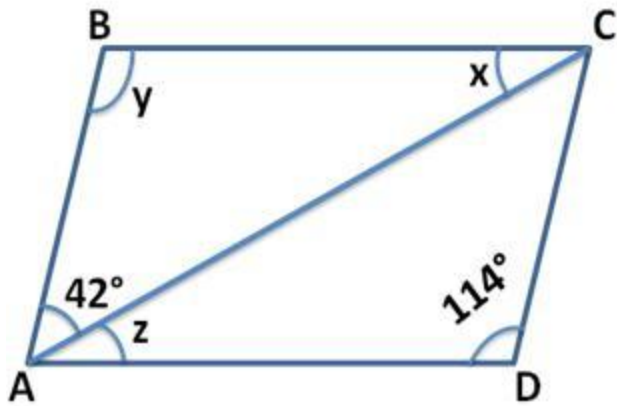
Marks (4)

Q 31 Find $x + y + z$ shown in the following figure:



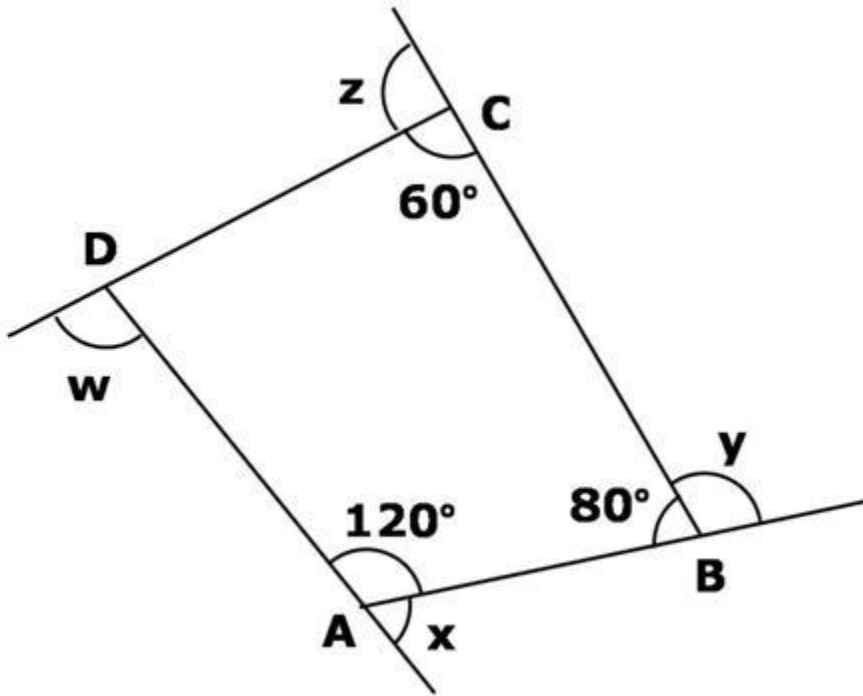
Marks (4)

Q 32 Find the values of x , y and z in a parallelogram ABCD shown in the figure given below.



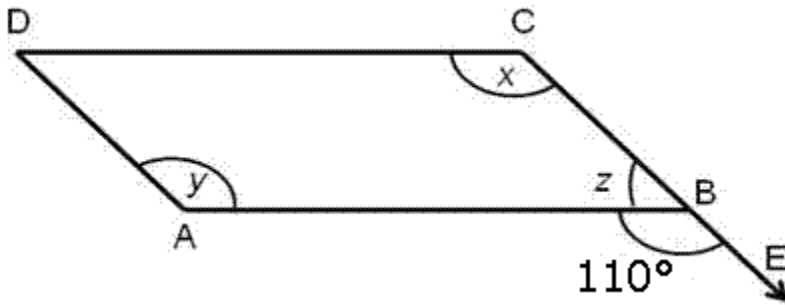
Marks (4)

Q 33 Find $x+y+z+w$ shown in the following figure:

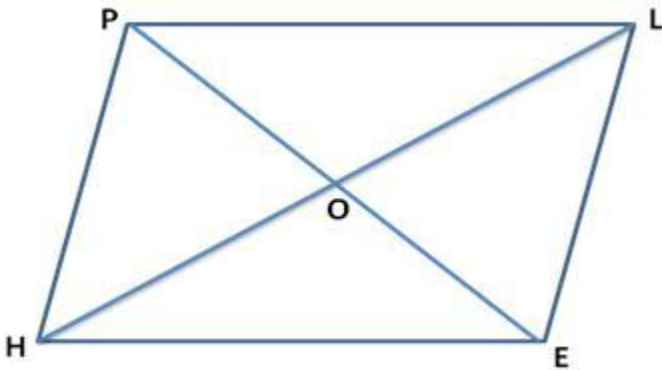


Marks (4)

Q 34 (i) In the figure given below, ABCD is a parallelogram. Find the value of x , y and z .

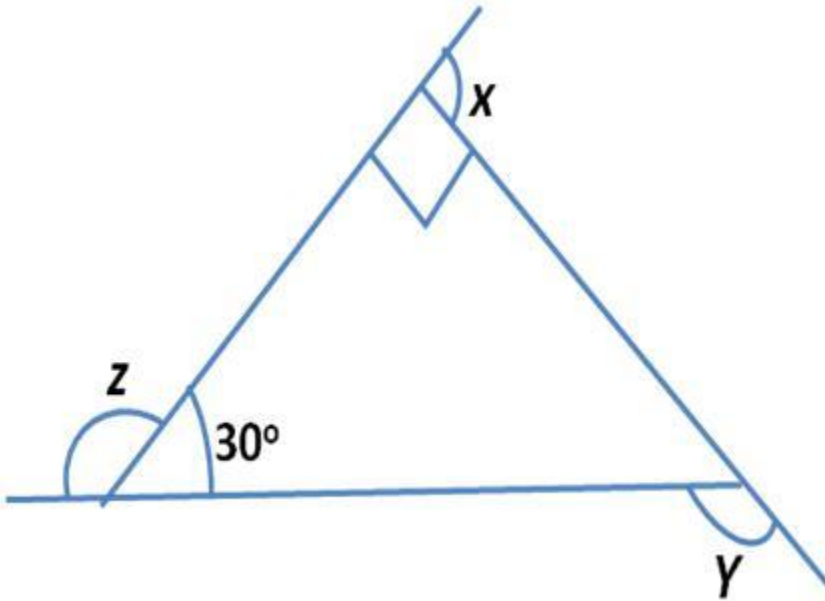


(ii) Figure HELP shown below is a parallelogram. It is given that $OE=3$ cm and HL is 7 more than PE, find OH.



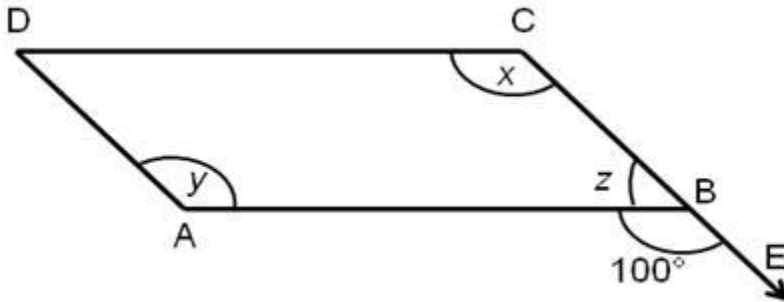
Marks (4)

Q 35 Find $x + y + z$ shown in the following figure:

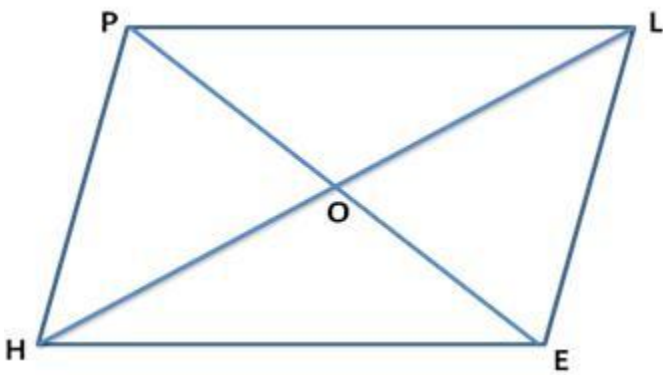


Marks (4)

Q 36 (i) In the figure given below, ABCD is a parallelogram. Find the value of x , y and z .

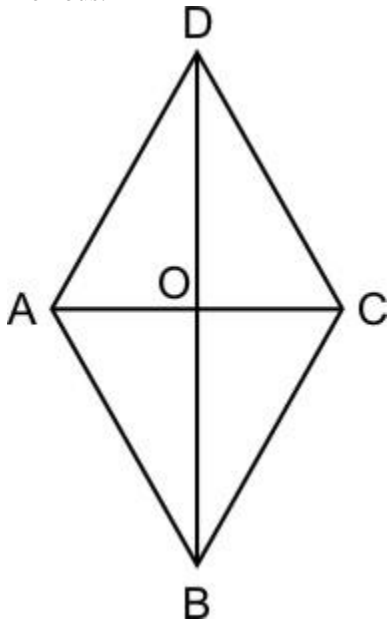


(i) Figure HELP shown below is a parallelogram. It is given that $OE = 4$ cm and HL is 7 more than PE, find OH.



Marks (4)

Q 37 The lengths of the diagonals AC and BD of a rhombus are 6 cm and 8 cm respectively. Find the length of each side of the rhombus.



Marks (5)

Most Important Questions

Q 1 What is the sum of all the angles of a 11-sided polygon?

Q 2 Five angles of a hexagon are 150° , 95° , 80° , 135° and 125° . Find the sixth angle.

Q 3 Find the measure of each angle of a regular pentagon.

Q 4 How many diagonals are there in a hexagon?

Q 5 How many diagonals are there in an octagon?

Q 6 If each interior angle of a regular polygon is 144° . Find the number of sides in it.

Q 7 An exterior angle and the interior angle of a regular polygon are in the ratio 2:7. Find the number of sides in the polygon?

Q 8 Find the sum of the interior angles of a polygon with 8 sides.

Q 9 Complete the following:

A quadrilateral has sides.

A quadrilateral has angles.

A quadrilateral has diagonals.

A quadrilateral has vertices.

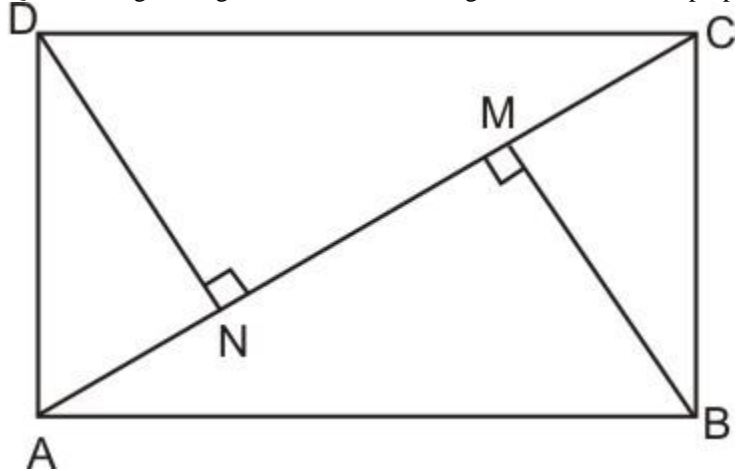
Q 10 Can a polygon have the sum of its interior angles as:

- (i) 2160° (ii) 2400°

Q 11 The angle of a quadrilateral are in the ratio 3 : 4 : 5 : 6. Find all its angles.

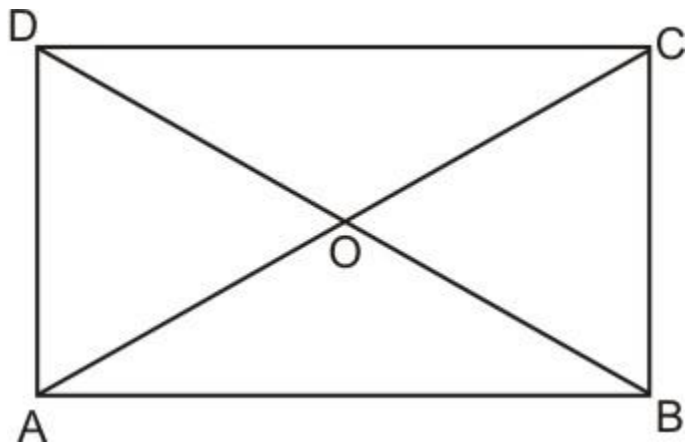
Q 12 Three angle of a quadrilateral are in the ratio 4 : 6 : 3. If the fourth angle is 100° . Find the other three angles of the quadrilateral.

Q 13 In the given figure, ABCD is a rectangle. BM and DN are perpendicular to AC from B and D respectively.



- (i) $AB = CD$? Why ?
- (ii) Is $\angle BMA = \angle DNC$? Why ?
- (iii) Is $\angle BAM = \angle DCN$? Why ?
- (iv) Is $\triangle BMA \cong \triangle DNC$? By which congruence condition?
- (v) Is $BM = DN$? Why ?

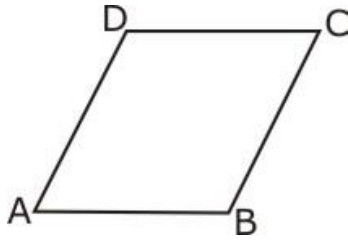
Q 14 In the given figure, diagonals AC and BD of a rectangle ABCD intersect each other at a point O. If $OA = 4$ cm, find AC and BD.



Q 15 In figure ABCD is parallelogram in which $\angle DAB = 75^\circ$ and $\angle DBC = 60^\circ$, calculate $\angle CDB$ and $\angle ADB$.

Q 16 The diagonal of a Rhombus is 6cm and 8cm find the length of a side of rhombus.

Q 17 ABCD is a parallelogram. What special name will you give it if the following additional facts are known?



- (i) $AB = AD$
- (ii) $\angle DAB = 90^\circ$
- (iii) $AB = AD$ and $\angle DAB = 90^\circ$

Q 18 State, whether the given statement is true or not.

- (i) A rectangle is a parallelogram.
- (ii) A square is a rectangle.
- (iii) A rectangle is a rhombus.
- (iv) A square is a rhombus.
- (v) A rectangle is a square.

Q 19 Which of the following are true for a rhombus?

- (i) It has two pairs of parallel sides.
- (ii) It has two pairs of equal angles.
- (iii) It has only two pairs of equal sides.
- (iv) Two of its angles are right angle.
- (v) Its diagonals bisect each other at right angle.
- (vi) Its diagonals are equal and perpendicular to each other.
- (vii) It has all its sides of equal lengths.

Q 20 How does a trapezium differ from a parallelogram?

Q 21 How does a rhombus differ from a square?

Q 22 How does a kite differ from a parallelogram?

Q 23 Let ABCD be a parallelogram. What special name would you give it, when:

- (a) $AB = AD$
- (b) $\angle ABC = 90^\circ$

(c) $AB = AD$ and $\angle ABC = 90^\circ$