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MATHS

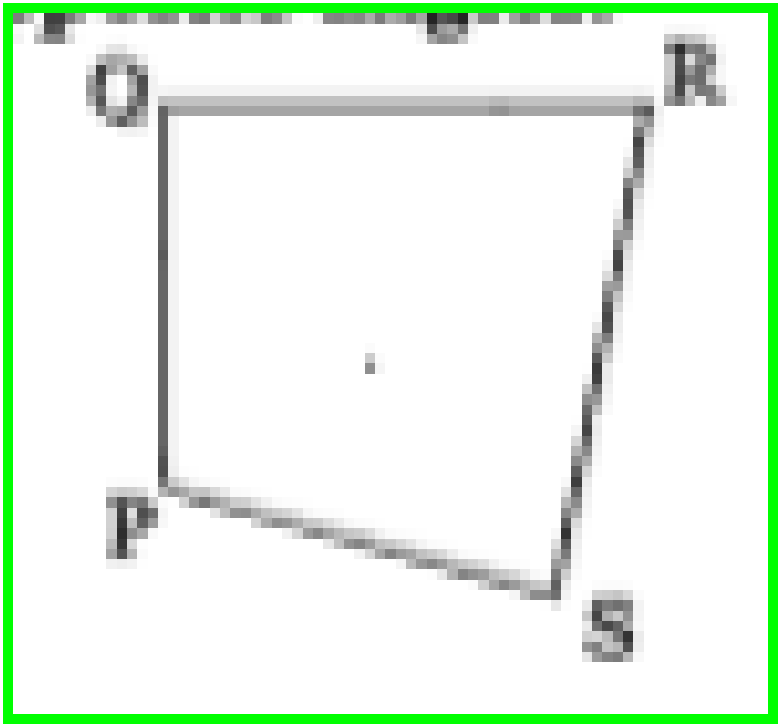
NCERT - NCERT Maths(TELUGU)

QUADRILATERALS

Exercise

1. In the quadrilateral PQRS. i) name the sides, angles vertices and diagonals. ii) also name all the pairs of adjacent sides, adjacent angles,

opposite sides and opposite angles.



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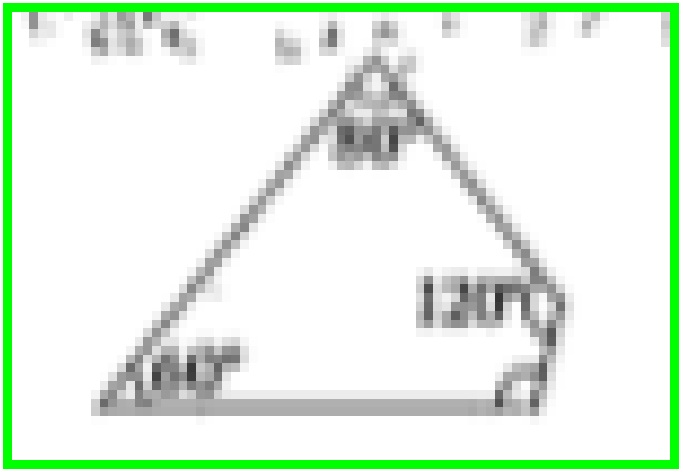
2. The three angles of a quadrilateral are 60°, 80° and 120°. Find the value of the fourth

angle?



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3. The angle of a quadrilateral are in the ratio of 2:3:4:6. Find the measure of each of the four angles.

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4. The four angles of a quadrilateral are equal. Draw this quadrilateral and Find the value of each of them.

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5. In a quadrilateral the angles are x°, $(x+10)^\circ$, $(x+20)^\circ$, $(x+30)^\circ$. Find the angles.

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6. The ratio of angles in a quadrilateral cannot be in the ratio 1:2:3:6. Why? Give reasons. (hint: try to draw a rough diagram of this quadrilateral)

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7. If Three angles of a quadrilateral are 80°, 60° and 70°. Find the value of the fourth angle.

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8. In a quadrilateral two angles are 80° and 100° and the remaining two angles are equal then find the equal angle.

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9. The angles of a quadrilateral are in ratio of 3:4:5:8. Find the angles.

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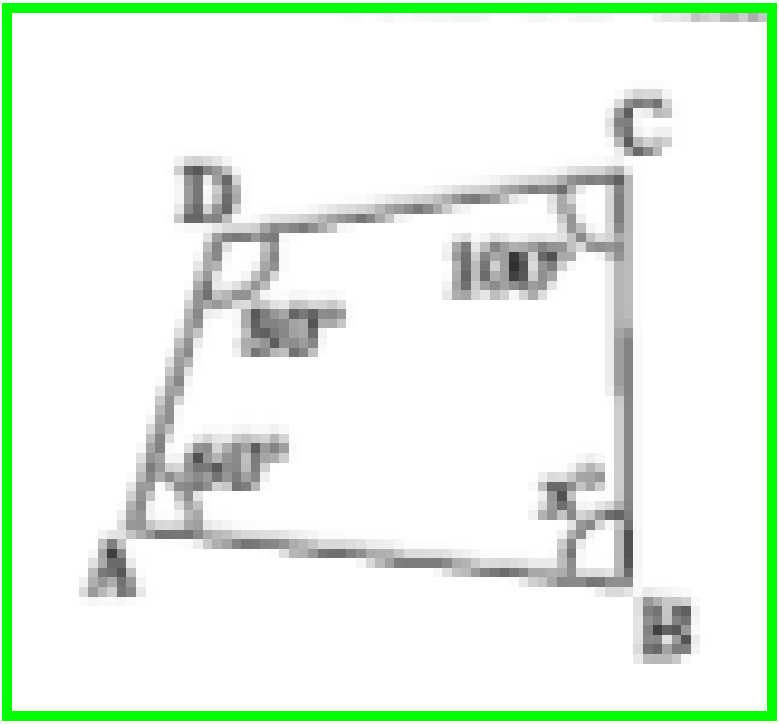
10. in a quadrilateral ABCD find x.



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11. The three angles of a quadrilateral are 55°, 65° and 105°. What is the fourth angle?

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12. The angles of a quadrilateral are x°, $(x-10)^\circ$, $(x+30)^\circ$ and $2x^\circ$. Find the angles.

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13. The angles of a quadrilateral are in ratio of 2:3:4:6. Find the measure of smallest angle.

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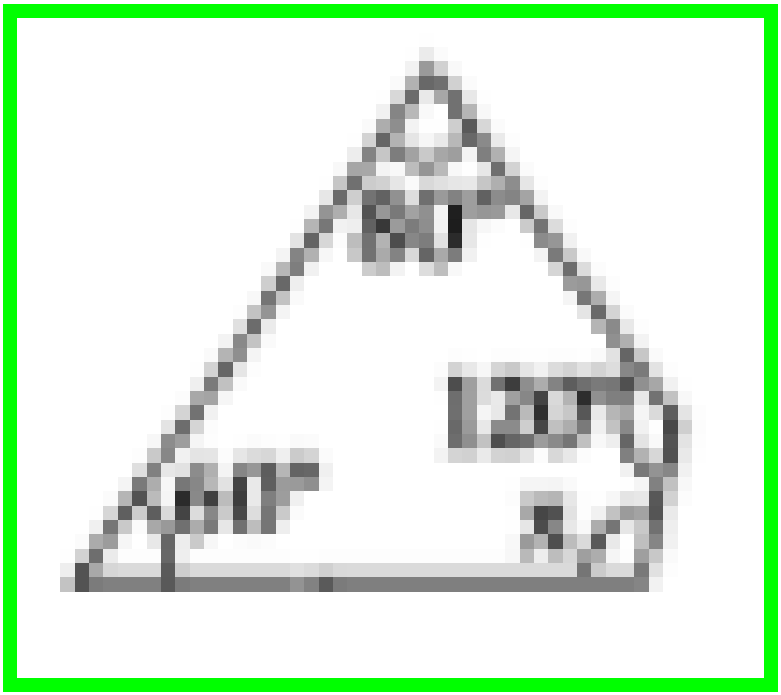
14. find x in the figure.



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15. Prove that in a kite ABCD, $\triangle ABC$ and $\triangle ADC$ are congruent.

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16. In the below parallogram find $\angle I$ and $\angle G$ by any other method? (hint: angle-sum property of a quadrilateral)

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17. Identify two or more pairs of supplementary angles from the parallelogram ABCD given above.

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18. Explain how a square is a- i) quadrilateral ii) parallelogram iii) rhombus iv) rectangle

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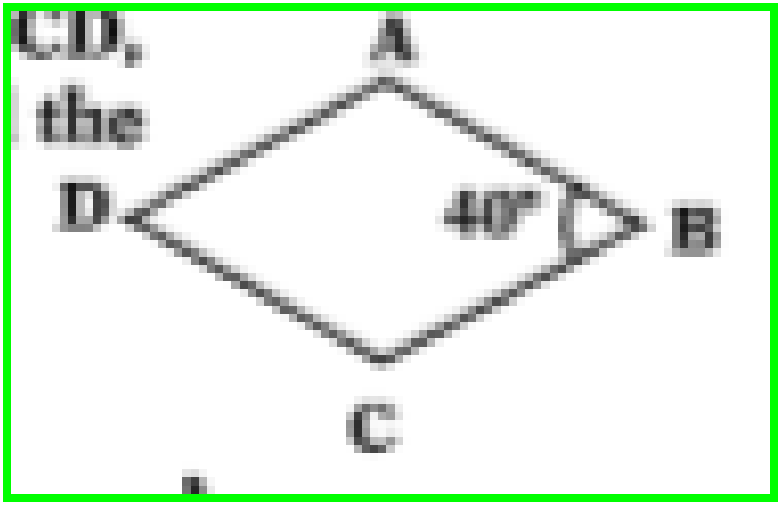
19. in a rhombus ABCD, $\angle CBA = 40^\circ$. Find the other angles.



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20. The adjacent angles of a parallelogram are x° and $(2x + 30)^\circ$. Find all the angles of the parallelogram.

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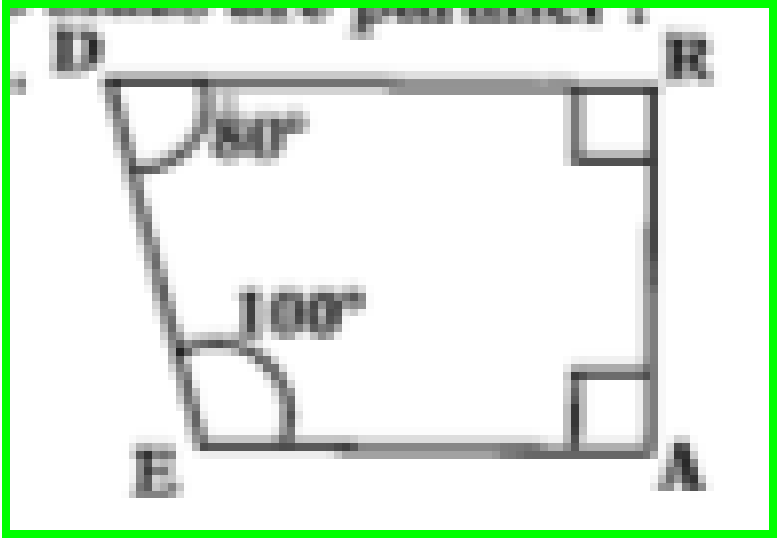
21. explain how DEAR is a trapezium. Which of its two sides are parallel?



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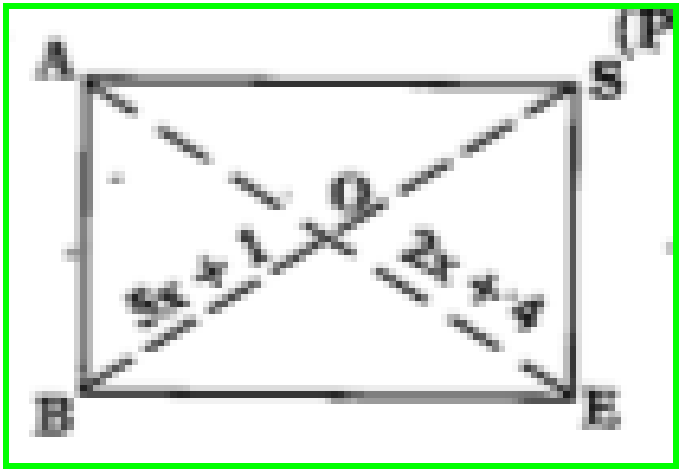
22. BASE is a rectangle. Its diagonals intersect at O.

Then Find the value of x, if

$OB = 5x + 1$ and $OE = 2x + 4$.



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23. In a quadrilateral ABCD a parallelogram, if $\angle A = 70^\circ$ and $\angle C = 65^\circ$? give reasons.

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24. Two adjacent sides of a parallelogram are in the ratio of $5:3$ and the perimeter of the parallelogram is 48cm. Then Find the length of each of its sides.

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25. The diagonals of the quadrilateral are perpendicular to each other. Is such a quadrilateral always a rhombus? Draw a rough figure to justify your answers.

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26. ABCD is a trapezium in which $\overline{AB} \mid\mid \overline{DC}$. If $\angle A = \angle B = 30^\circ$, what are the measures of other angles?

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27. Draw a rough figure of the following:

1) Trapezium 2) Parallelogram 3) Rhombus

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28. Write the properties of parallelogram.

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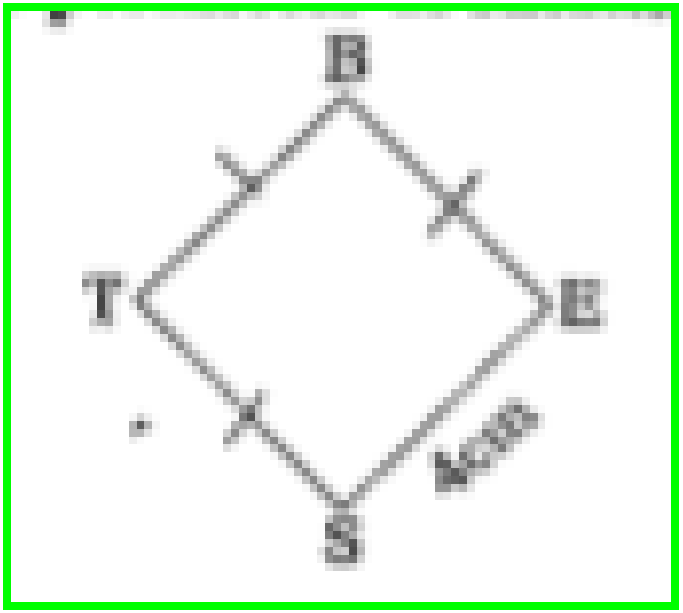
29. Find the value of the perimeter of given Rhombus BEST.



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30. Find the perimeter of the parallelogram whose adjacent sides are 4cm and 6cm.

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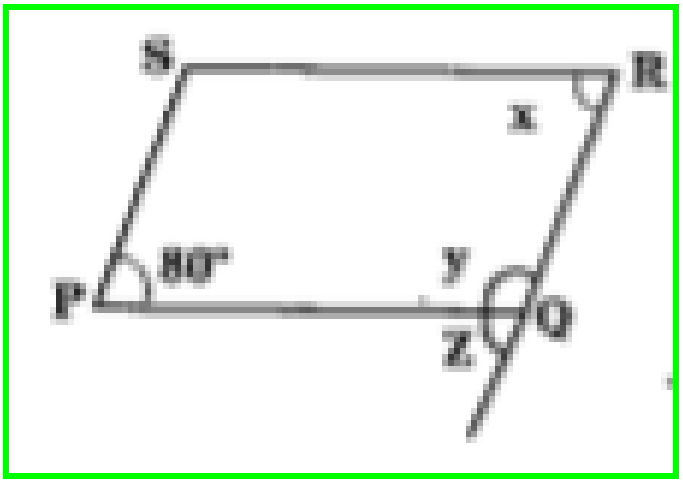
31. In the given parallelogram PQRS, find the value of $x + y + z$.



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32. Let PQRS be a parallelogram, then find the value of $\angle P - \angle R$.

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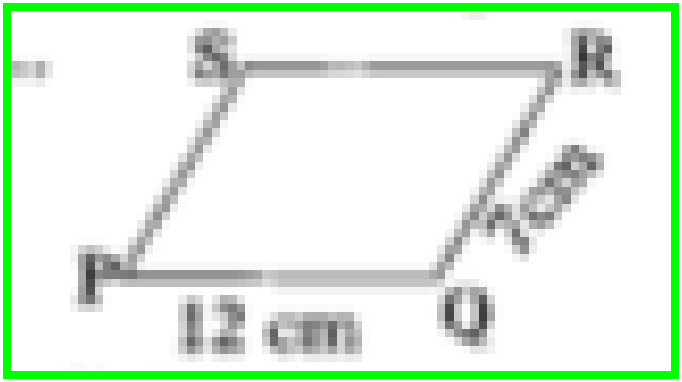
33. Find the perimeter of the parallelogram PQRS .....



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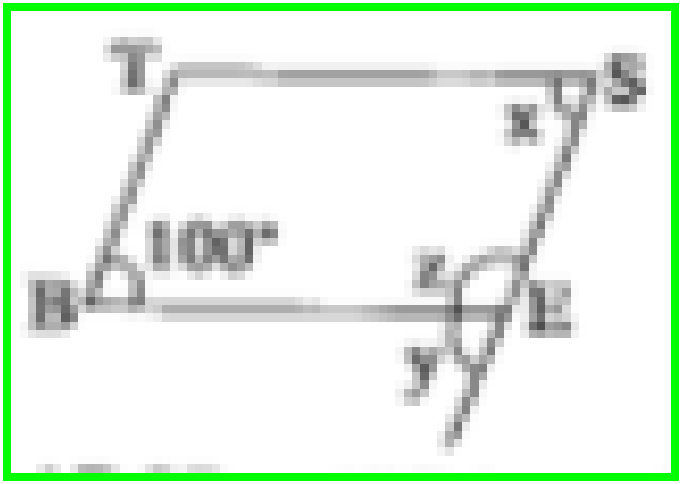
34. Let BEST be a parallelogram, then find the values of x, y and z.



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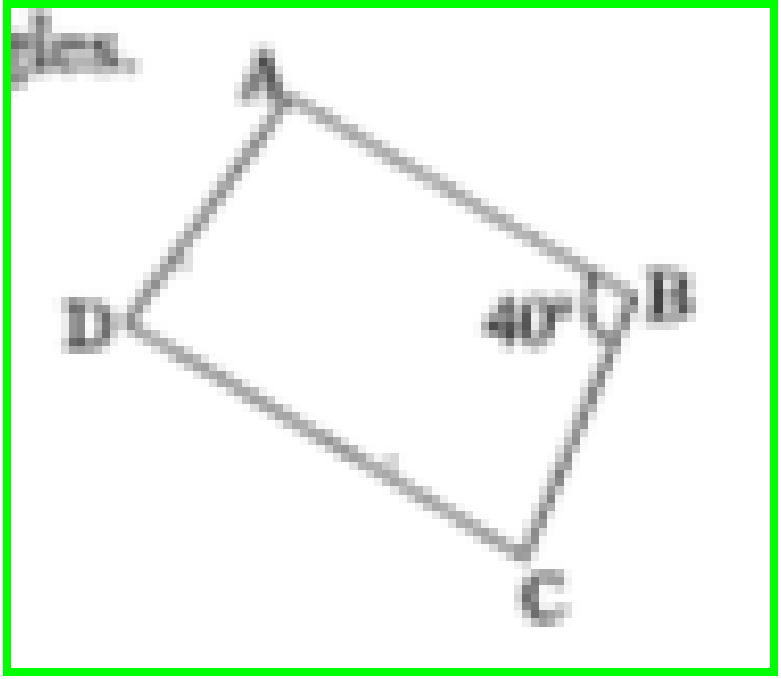
35. in rhombus ABCD, $\angle CBA = 40^\circ$. Find other angles.



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36. The adjacent angles of a parallelogram are x° and $(2x + 30)^\circ$. Find all the angles of the parallelogram.

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37. The four angles of a quadrilateral are equal. Draw this quadrilateral and Find the value of each of them.

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38. ABCD is a trapezium in which $\overline{AB} \parallel \overline{DC}$. If $\angle A = \angle B = 30^\circ$, what are the measures of other angles?

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39. The angle of a quadrilateral are in the ratio of 2:3:4:6. Find the measure of each of the four angles.

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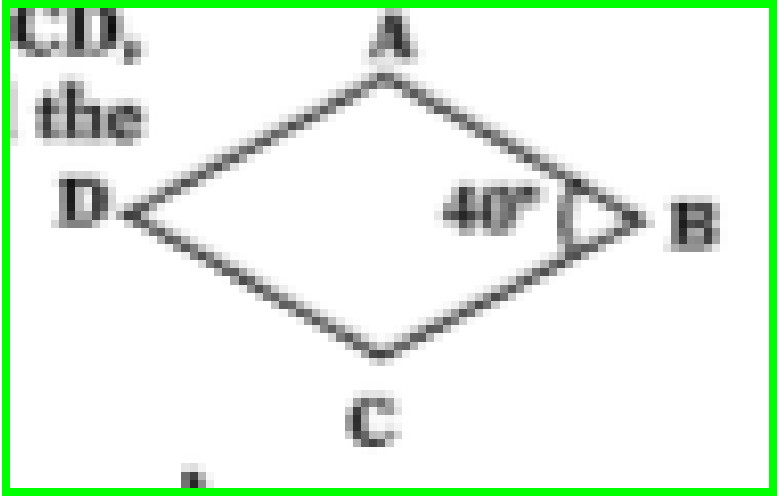
40. in a rhombus ABCD, $\angle CBA = 40^\circ$. Find the other angles.



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41. The adjacent angles of a parallelogram are x° and $(2x + 30)^\circ$. Find all the angles of the parallelogram.

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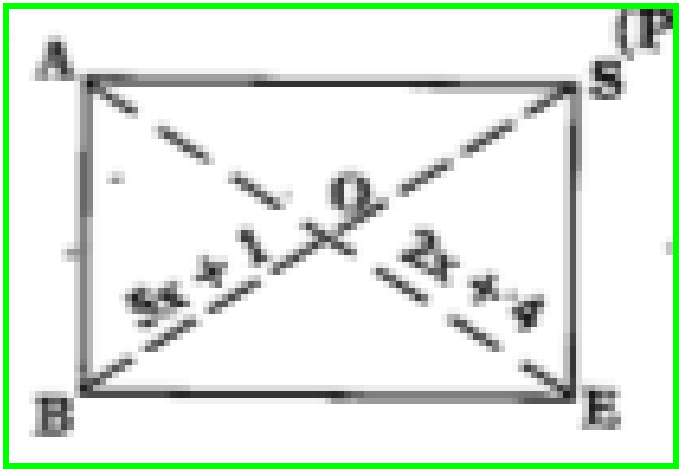
42. BASE is a rectangle. Its diagonals intersect at O.

Then Find the value of x, if $OB = 5x + 1$ and $OE = 2x + 4$.



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43. The angles of a quadrilateral cannot be in ratio of 1:2:3:6. Why? Give reasons.

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44. Explain how a square is – i) quadrilateral ii) parallelogram iii) rhombus iv) rectangle

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45. In a quadrilateral ABCD a parallelogram, if $\angle A = 70^\circ$ and $\angle C = 65^\circ$? give reasons.

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46. The diagonals of the quadrilateral are perpendicular to each other. Is such a quadrilateral always a rhombus? Draw a rough figure to justify your answers.

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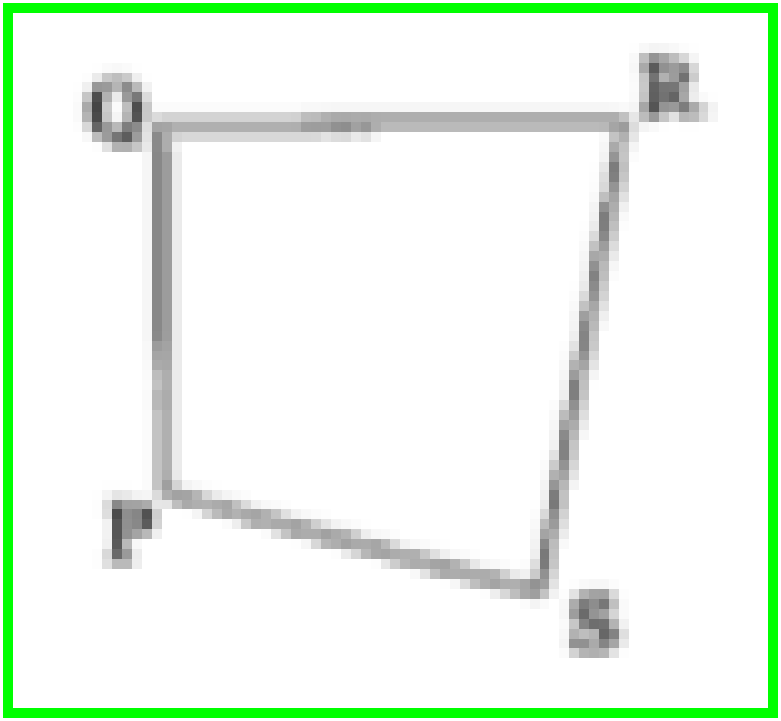
47. in quadrilateral PQRS. i) name the sides, angles, vertices and diagonals. ii) also name the pairs of adjacent angles, opposite sides and opposite angles.



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48. In a quadrilateral the line segment joining the opposite vertices is called .....

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49. Number of vertices of a quadrilateral is .....

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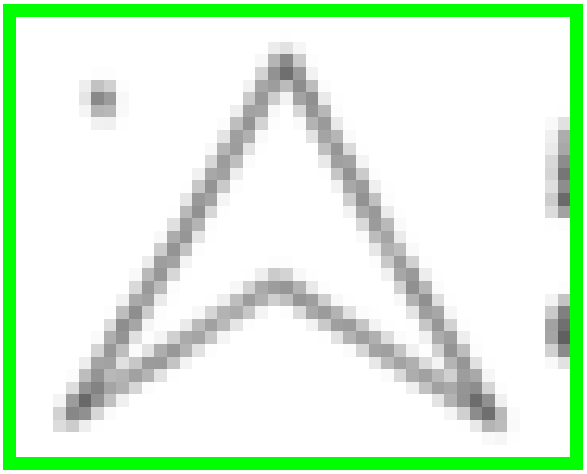
50. is an example of ..... quadrilateral.



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51. Some 4 angles in a quadrilateral is ..... right angles.

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52. Sum of 3 angles in a quadrilateral is 300° then the measure of the 4th angle is .....

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53. Sum of four angles in a quadrilateral is 360° and they are equal then each angle is .....

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54. The three angles of a quadrilateral are 50°, 60° and 100° then the fourth angle is .....

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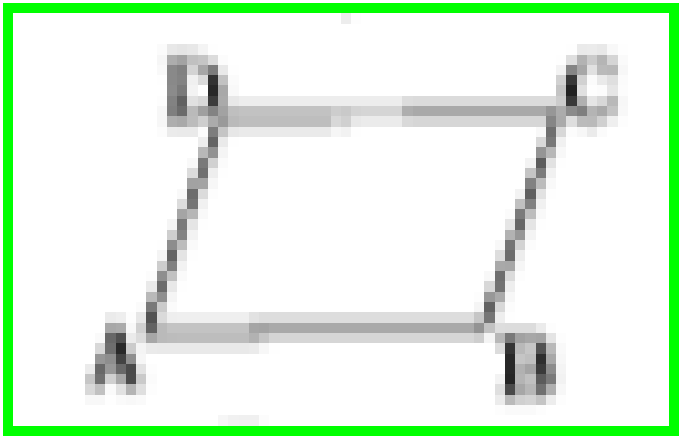
55. From the figure, the value of $\angle A + \angle B + \angle C + \angle D = \ldots\ldots\ldots\ldots$



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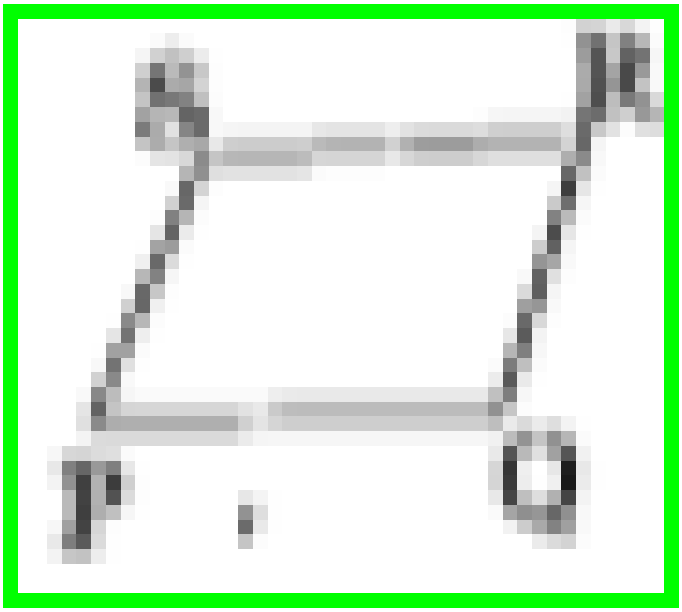
56. In the Quadrilateral PQRS, PQ and RS are called ..... sides.



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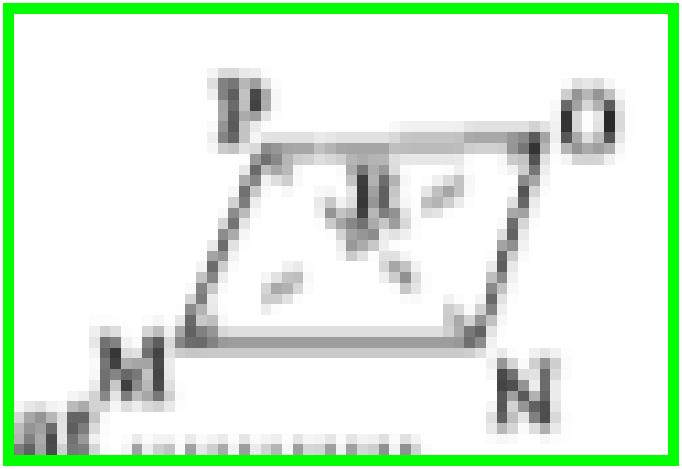
57. In the Quadrilateral MNOP, the two diagonals meet at ..... .



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58. Sum of the angles in a quadrilateral is .....

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59. The Number of diagonals of a Quadrilateral is .....

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60. Number of vertices of a quadrilateral is .....

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61. The Quadrilateral will have ..... sides.

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62. State whether true or false: All the rectangles are squares (T/F)

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63. State whether true or false:All the rhombus are parallelogram (T/F)

Watch Video Solution

64. State whether true or false:All squares are rhombus and also rectangles (T/F)

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65. State whether true or false:All parallelograms are trapeziums(T/F)

Watch Video Solution

66. State whether true or false-

All rhombuses are kites

Watch Video Solution

67. State whether true or false:All kites are rhombus(T/F)

Watch Video Solution

68. State whether true or false:All parallelograms are trapeziums(T/F)

Watch Video Solution

69. State whether true or false:All squares are trapeziums(T/F)

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70. A parallelogram in which two adjacent sides are

equal is a .....

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71. A parallelogram in which one angle is 90° and two adjacent sides are equal is a .....

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72. In trapezium ABCD, $\overline{AB} \mid\mid \overline{DC}$. If $\angle D = x^\circ$,

then $\angle A =$ .....

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73. Every diagonal in a parallelogram divides it in to .....triangles.

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74. In parallelogram ABCD, its diagonals $\overline{AC}$ and $\overline{BD}$ intersect at O. if $AO = 5cm$ then $AC =$ .....cm.

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75. In a rhombus ABCD, its diagonal intersects at 'O'. then $\angle AOB =$ .....degrees.

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76. ABCD is a parallelogram then $\angle A - \angle C$= .....degrees.

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77. In a rectangle ABCD, the diagonal $AC = 10cm$ then diagonal $BD =$ .....cm.

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78. In a square ABCD, the diagonal $\overline{AC}$ is drawn. Then $\angle BAC =$ .....degrees.

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79. In a rectangle the diagonals are .....

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80. Value of Each angle in A Rectangle is .....

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81. In parallelogram ABCD, Value of $\angle A + \angle B =$ .....

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82. The Side of square is 10cm then it's perimeter is ..... cm.

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83. If $l = 4cm$ and $b = 3cm$ then the area of rectangle = ...cm^2.

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84. The Side of Rhombus is 3cm then it's perimeter is ..... cm.

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85. State whether true or false:Every rectangle is square(T/F)

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86. (Fill in the blanks) area of parallelogram=.....

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87. Fill in the blank:Number of pairs of opposite sides are equal in trapezium is .....

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88. Fill in the blank:If non parallel sides are equal in a trapezium then it is called ..... trapezium.

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89. In a rectangle the diagonals are .....

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90. Fill in the blank:In square each angle is .....

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91. ABCD is a parallelogram then $\angle A - \angle C$= .....degrees.

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92. Fill in the blank:In a quadrilateral one pair of opposite sides are parallel then it is.....

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93. Three angles of a quadrilateral are 60°, 80° and 100° ,then the measure of fourth angle is.....

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94. In parallelogram ABCD, Value of $\angle A + \angle B =$ .....

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95. In Rhombus, the diagonals are .....

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96. The perimeter of parallelogram, if the adjacent sides are 3cm and 2cm is ..... .

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97. Two angles of a quadrilateral are 120° and 140° and the remaining two are the same then the measure of equal angle is.....

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98. The length of one diagonal in a rhombus is 6cm then the length of other diagonal is.....

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99. The ratio of adjacent angles in a parallelogram is 3:2 then least angle is.....

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100. The length of one diagonal in a rhombus is 6cm then the length of other diagonal is.....

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101. The ratio of adjacent angles in a parallelogram is 3:2 then least angle is.....

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102. Sum of 3 angles in a quadrilateral is 270° then the fourth angle is.....

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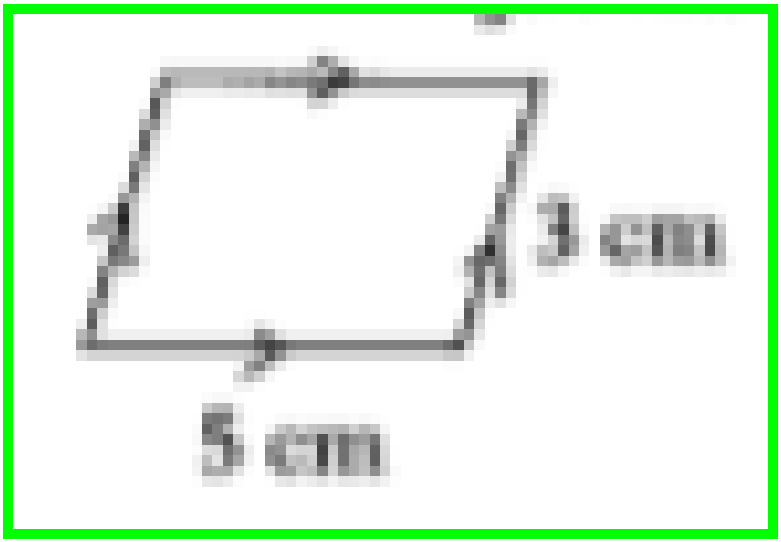
103. perimeter of adjacent figure is .....



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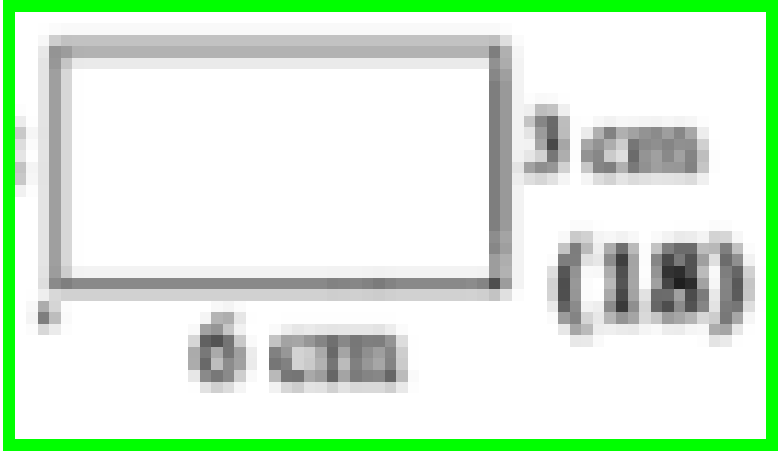
104. the perimeter of adjacent rectangle is .....cm.



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105. State whether true or false:In a square diagonals are not equal(T/F)

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106. The measure of each angle in rhombus is 90° (T/F)

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107. State whether true or false:There are two diagonals in a parallelogram(T/F)

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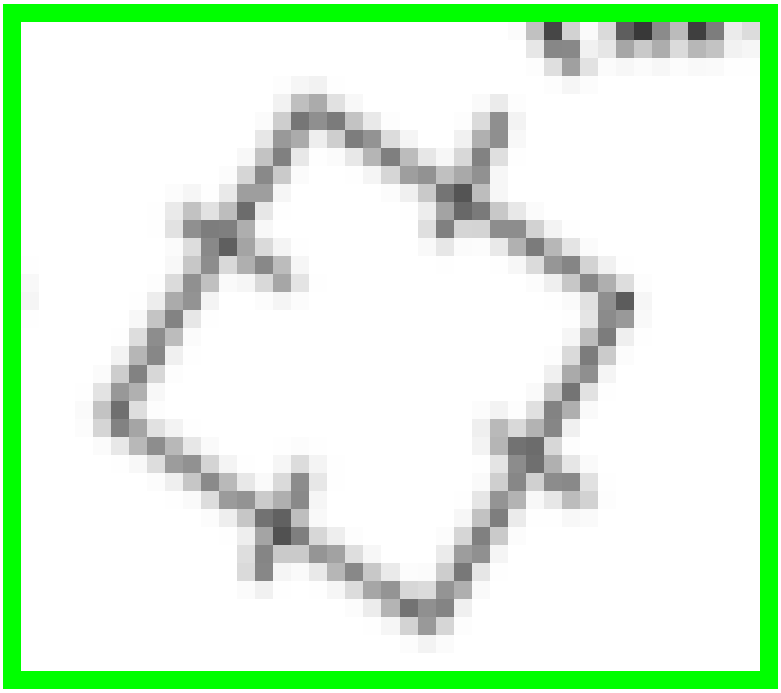
108. the figure represents.....



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109. Sum of the angles in a quadrilateral is .....

A. 200°

B. 180°

C. 360°

D. None

Answer:

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110. If two pairs of opposite sides are equal in a quadrilateral then it is called .....

A. 1. Parallelogram

B. 2. Rectangle

C. 3. Square

D. None

Answer:

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111. ABCD is a parallelogram then $\angle A - \angle C$= .....degrees.

A. 50°

B. 60°

C. 90°

D. 0

Answer:

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112. In a rhombus diagonals intersect at .....

A. Right angles

B. Acute angles

C. Obtuse angles

D. 0

Answer:

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113. No. of diagonals of a rectangle is .....

A. 4

B. 2

C. 3

D. 1

Answer:

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114. ABCD is a quadrilateral, then $\angle A + \angle B + \angle C + \angle D =$

A. 180°

B. 360°

C. 200°

D. 280°

Answer:

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115. Each angle in a square is .....

A. 90°

B. 190°

C. 80°

D. 100°

Answer:

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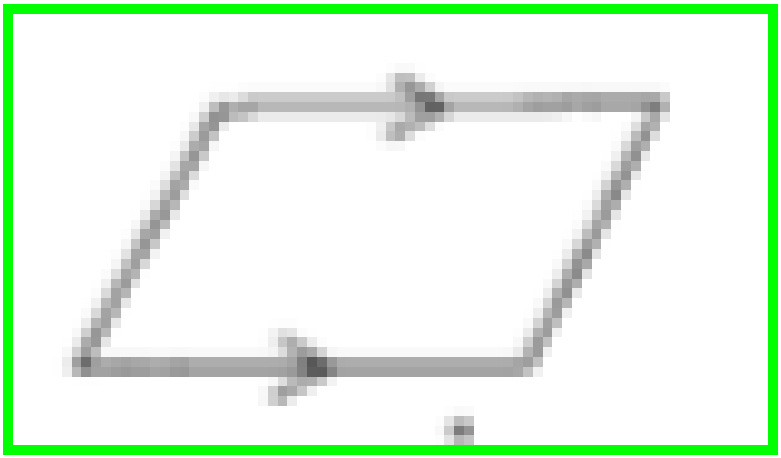
116. The adjacent figure represents .....



A. Parallelogram

B. Square

C. Trapezium

D. None

Answer:

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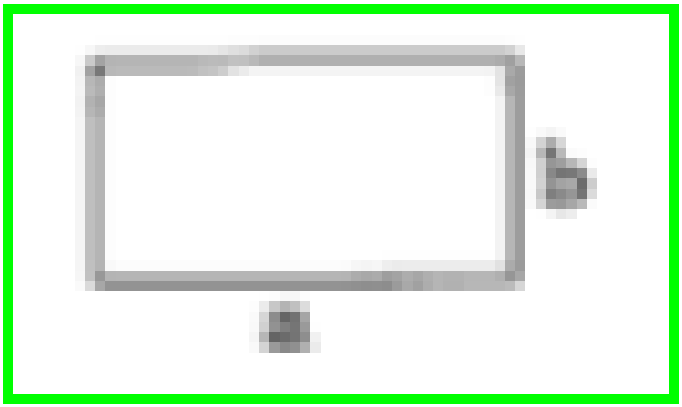
117. In the adjacent figure the perimeter of rectangle is .....



A. 2(a + b)

B. a + b

C. a – b

D. ab

Answer:

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118. In a square the diagonals are .....

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119. Number of vertices of a quadrilateral is .....

A. 1

B. 2

C. 3

D. 4

Answer:

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120. The adjacent angles of a parallelogram are .....

A. 1. Supplementary

B. 2. Complementary

C. 3. 190°

D. 4. 0

Answer:

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121. The perimeter of Rhombus whose side is a is :

A. 3a

B. 4a

C. 5a

D. $\frac{a}{2}$

Answer:

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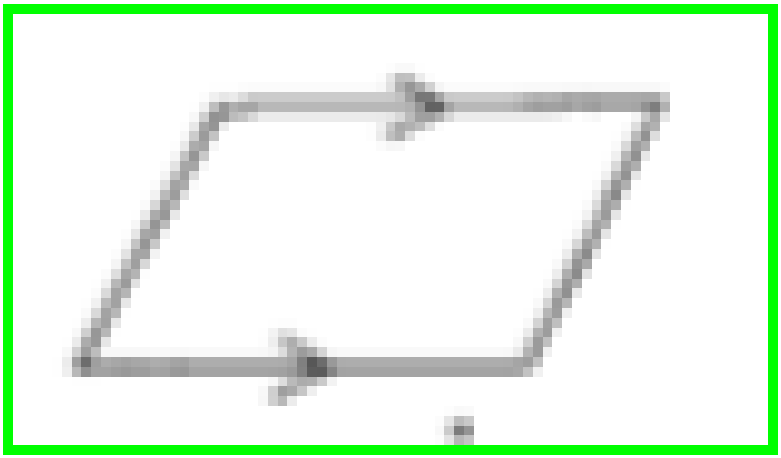
122. The adjacent figure represents .....



A. Rhombus

B. Isosceles trapezium

C. Square

D. None

Answer:

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Example

1. The three angles of a quadrilateral are 55°, 65° and 105°. What is the fourth angle?

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2. In a quadrilateral two angles are 80° and 100° and the remaining two angles are equal

then find the equal angle.

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3. The angles of a quadrilateral are x°, $(x-10)^\circ$, $(x+30)^\circ$ and $2x^\circ$. Find the angles.

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4. The four angles of a quadrilateral is in the ratio of 3:4:5: 6. Find the measure of each

angle.

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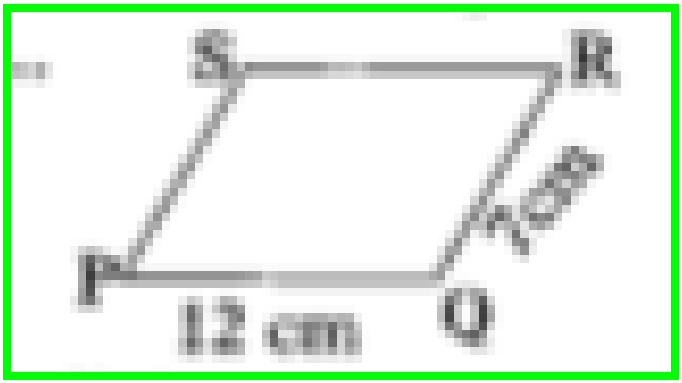
5. Find the perimeter of the parallelogram PQRS .....



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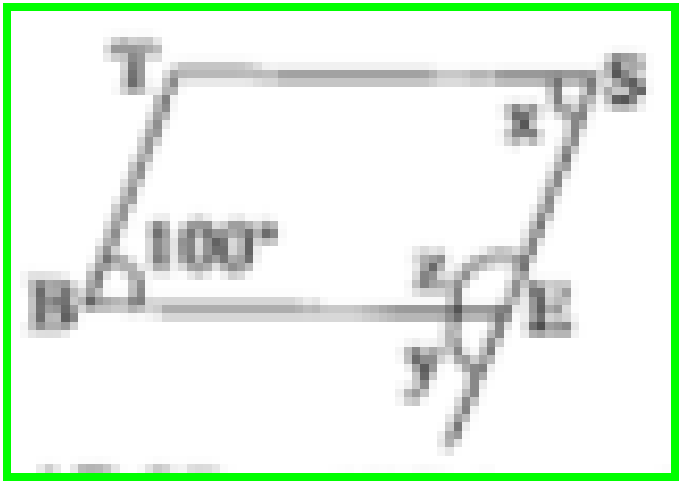
6. Let BEST be a parallelogram, then find the values of x, y and z.



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7. In parallelogram RING if m $\angle R = 70^\circ$, find all the other angles.

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8. HELP is a parallelogram. Given that OE = 4 cm, where O is the point of intersection of the diagonals and HL is 5 cm more than PE? Find OH.

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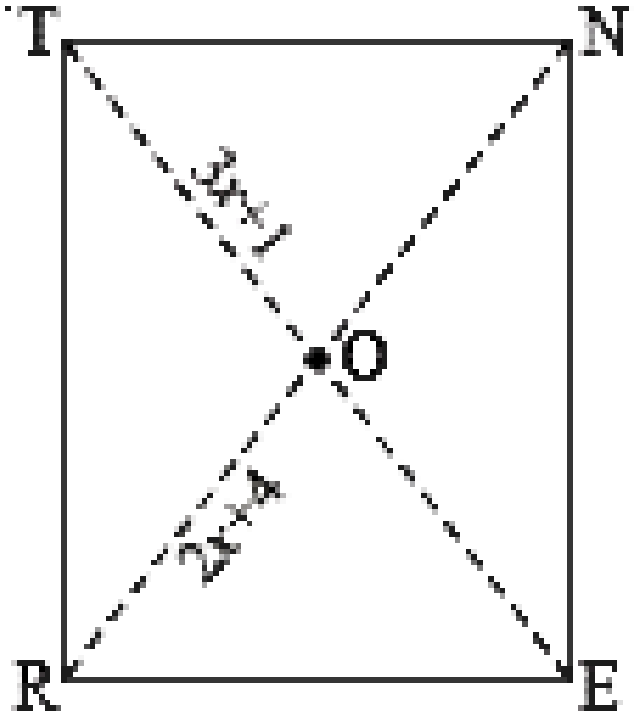
9. RENT is a rectangle. Its diagonals intersect at O. Find x, if OR = 2x + 4 and OT = 3x +1.



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10. In trapezium $ABCD$, $\overline{AB}$ is parallel to $\overline{CD}$. If $\angle A = 50^\circ, \angle B = 70^\circ$. Find

$\angle C$ and $\angle D$.

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11. The measures of two adjacent angles of a parallelogram are in the ratio 3 : 2. Find the angles of the parallelogram.

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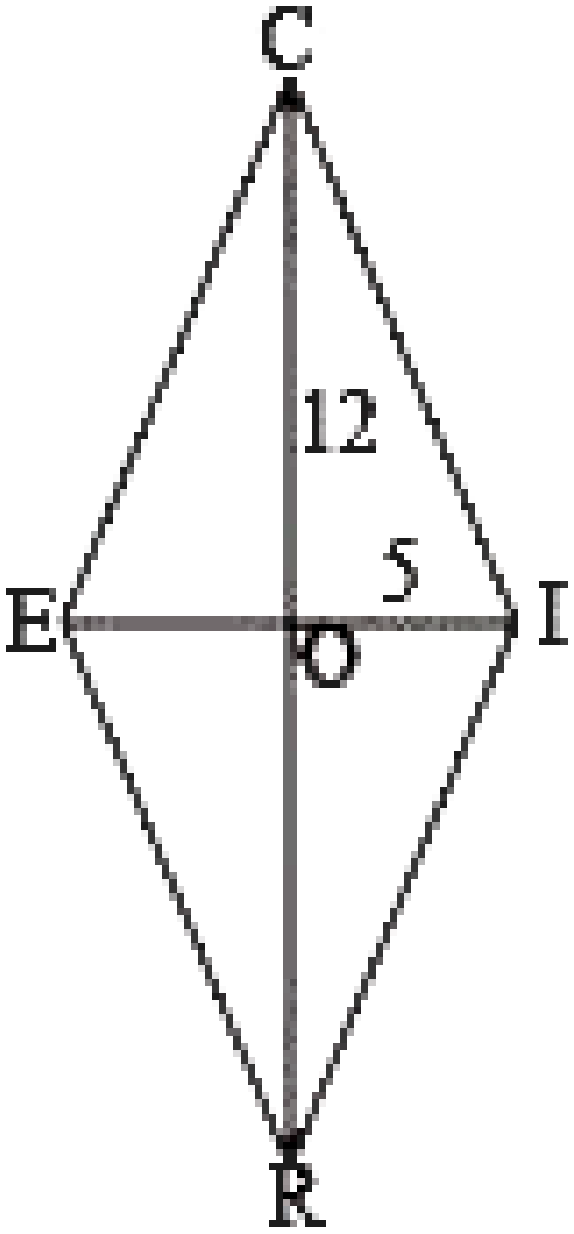
12. RICE is a rhombus. Find OE and OR. Justify your findings.



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13. The three angles of a quadrilateral are 55°, 65° and 105°. What is the fourth angle?

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14. In a quadrilateral, two angles are 80° and 120°. The remaining two angles are equal. What is the measure of each of these angles?

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15. The angles of a quadrilateral are x°, $(x-10)^\circ$, $(x+30)^\circ$ and $2x^\circ$. Find the angles.

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16. The four angles of a quadrilateral is in the ratio of 3:4:5: 6. Find the measure of each angle.

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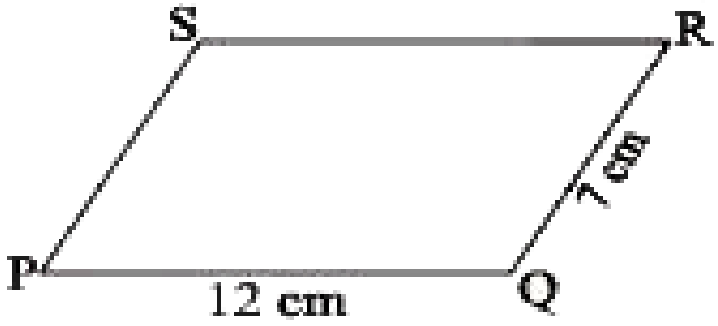
17. Find the perimeter of the parallelogram PQRS.



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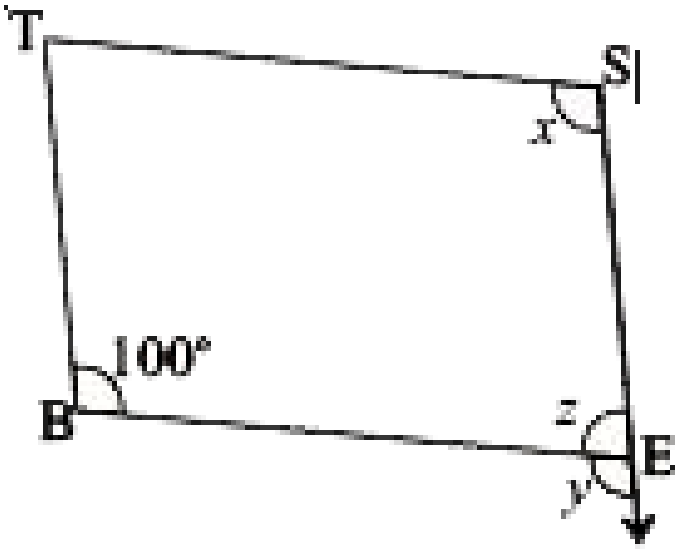
18. BEST is a parallelogram. Find the values x, y and z.



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19. In parallelogram RING if m $\angle R = 70^\circ$, find all the other angles.

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20. HELP is a parallelogram. Given that OE = 4 cm, where O is the point of intersection of the diagonals and HL is 5 cm more than PE? Find OH.

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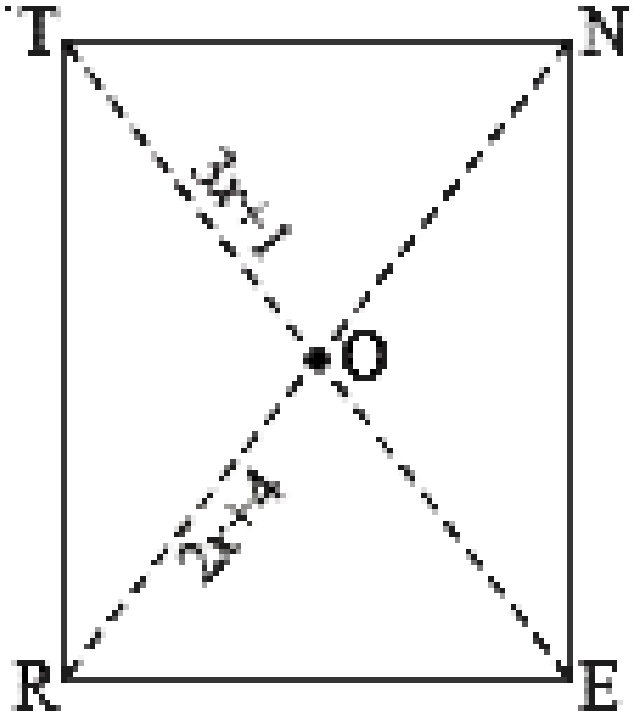
21. RENT is a rectangle. Its diagonals intersect at O. Find x, if OR = 2x + 4 and OT = 3x +1.



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22. In trapezium $ABCD$, $\overline{AB}$ is parallel to $\overline{CD}$. If $\angle A = 50^\circ, \angle B = 70^\circ$. Find

$\angle C$ and $\angle D$.

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23. The measures of two adjacent angles of a parallelogram are in the ratio 3 : 2. Find the angles of the parallelogram.

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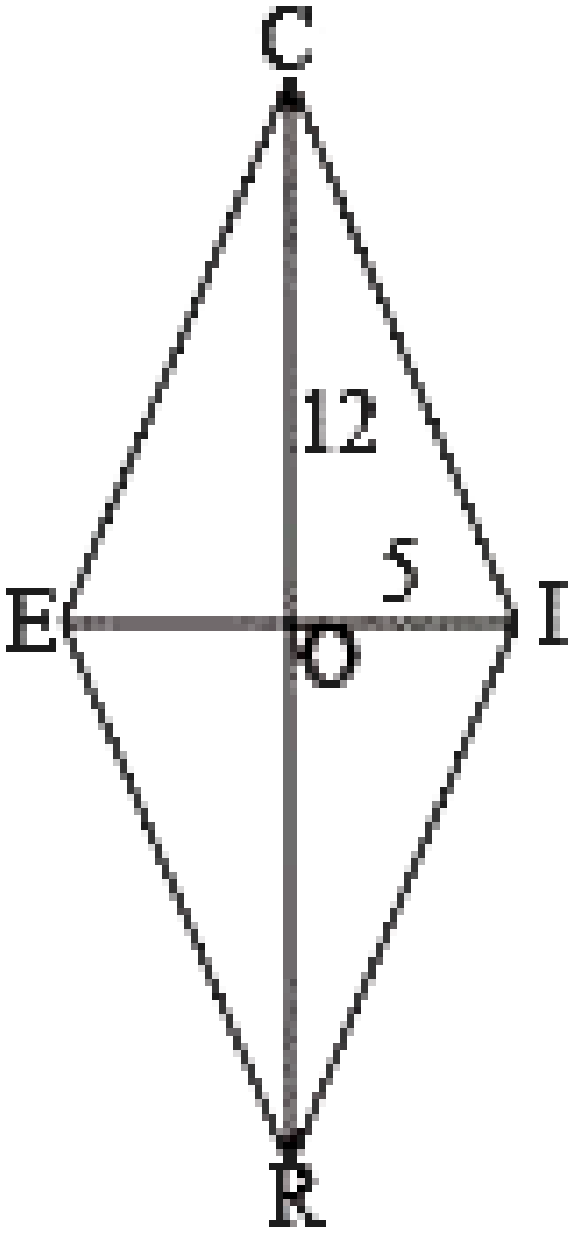
24. RICE is a rhombus. Find OE and OR. Justify your findings.



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Exercise 1

1. in quadrilateral PQRS. i) name the sides, angles, vertices and diagonals. ii) also name the pairs of adjacent angles, opposite sides

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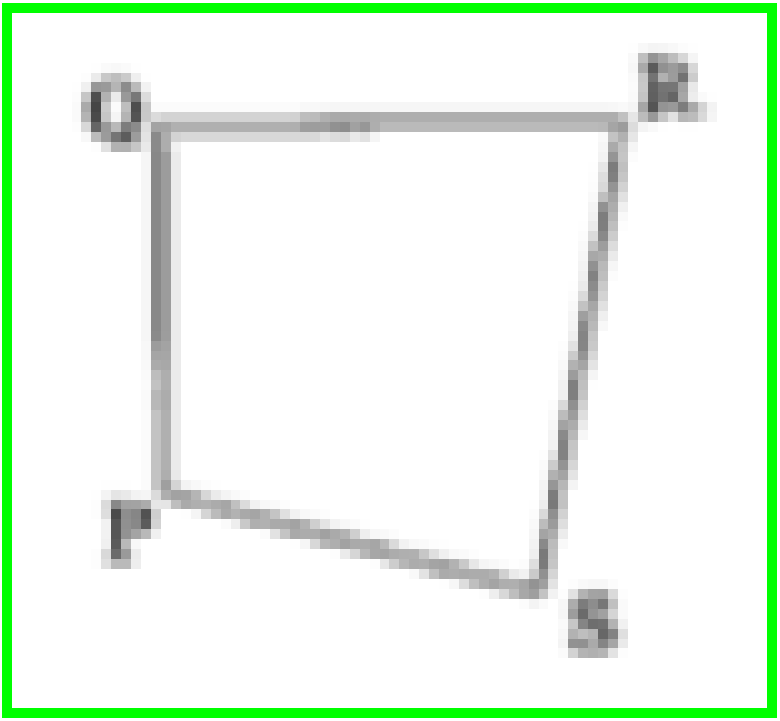

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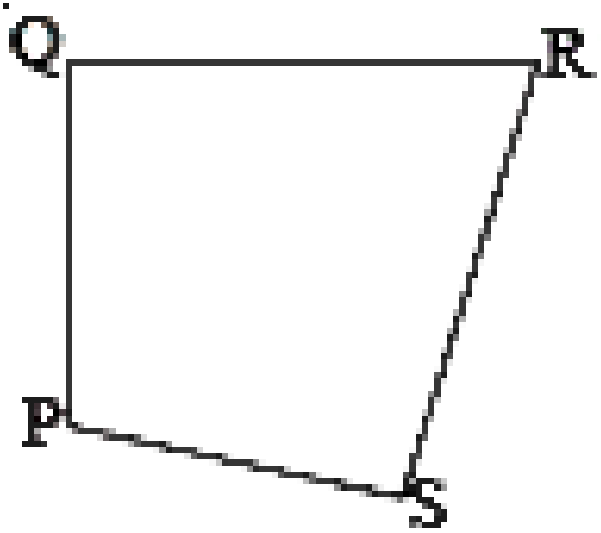
2. In quadrilateral PQRS



Also name all the pairs of adjacent sides, adjacent angles, opposite sides and opposite angles.

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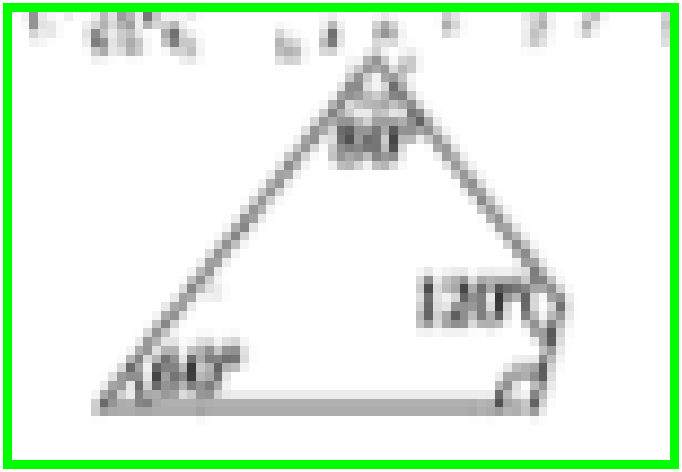
3. The three angles of a quadrilateral are 60°, 80° and 120°. Find the value of the fourth angle?



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4. The angle of a quadrilateral are in the ratio of 2:3:4:6. Find the measure of each of the four

angles.

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5. The four angles of a quadrilateral are equal. Draw this quadrilateral and Find the value of each of them.

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6. In a quadrilateral the angles are x°, $(x+10)^\circ$, $(x+20)^\circ$, $(x+30)^\circ$. Find the

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Watch Video Solution

7. The ratio of angles in a quadrilateral cannot be in the ratio 1:2:3:6. Why? Give reasons. (hint: try to draw a rough diagram of this quadrilateral)

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Exercise 2

1. State whether true or false: All the rectangles are squares (T/F)

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2. State whether true or false:All the rhombus are parallelogram (T/F)

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3. State whether true or false:All squares are rhombus and also rectangles (T/F)

Watch Video Solution

4. State whether true or false:All squares are not parallelograms(T/F)

Watch Video Solution

5. State whether true or false:All kites are rhombus(T/F)

Watch Video Solution

6. State whether true or false-

All rhombuses are kites

Watch Video Solution

7. State whether true or false:All parallelograms are trapeziums(T/F)

Watch Video Solution

8. State whether true or false:All squares are trapeziums(T/F)

Watch Video Solution

9. Explain how a square is a -

quadrilateral

Watch Video Solution

10. Explain how a square is a- i) quadrilateral ii)

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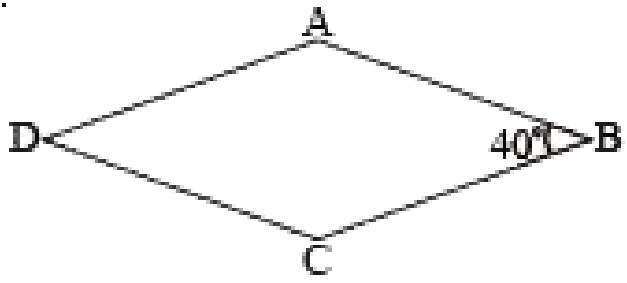
13. In a rhombus $ABCD$, $\angle CBA = 40^\circ$. Find the other angles.



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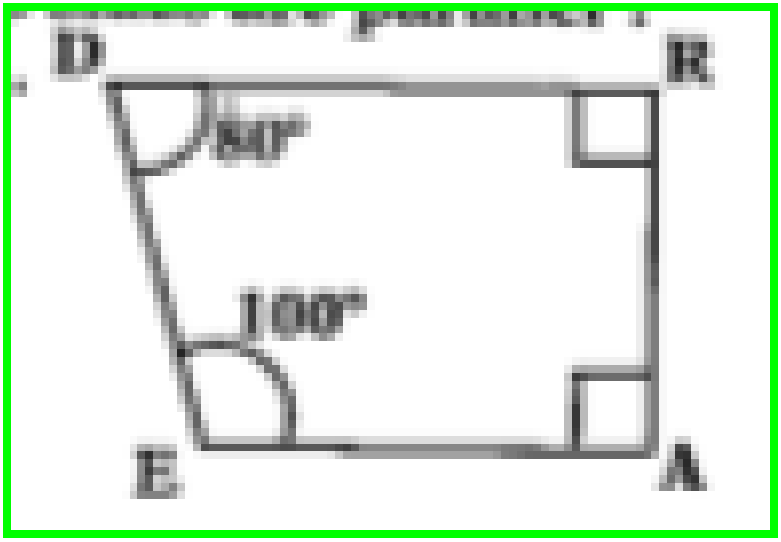
Watch Video Solution

15. explain how DEAR is a trapezium. Which of its two sides are parallel?



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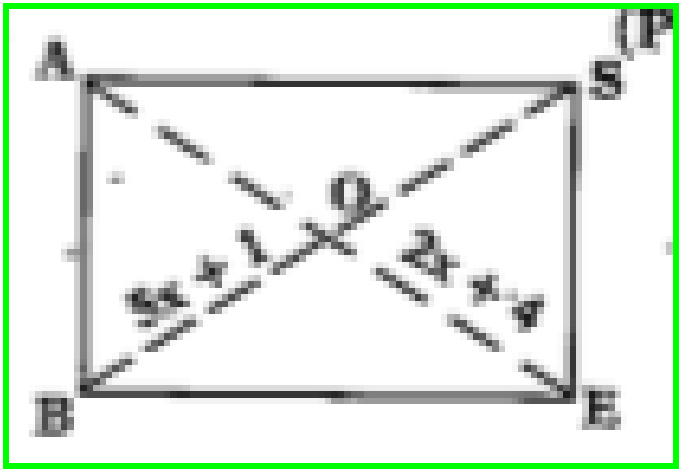
16. BASE is a rectangle. Its diagonals intersect at O.

Then Find the value of x, if $OB = 5x + 1$ and $OE = 2x + 4$.



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17. In a quadrilateral ABCD a parallelogram, if $\angle A = 70^\circ$ and $\angle C = 65^\circ$? give reasons.

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Exercise 2 Fill In The Blanks

1. A parallelogram in which two adjacent sides are

equal is a .....

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2. A parallelogram in which one angle is 90° and two adjacent sides are equal is a .....

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3. In trapezium ABCD, $\overline{AB} \mid\mid \overline{DC}$. If $\angle D = x^\circ$,

then $\angle A =$ .....

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4. Every diagonal in a parallelogram divides it in to .....triangles.

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5. In parallelogram ABCD, its diagonals $\overline{AC}$ and $\overline{BD}$ intersect at O. if $AO = 5cm$ then $AC =$ .....cm.

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6. In a rhombus ABCD, its diagonal intersects at 'O'. then $\angle AOB =$ .....degrees.

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7. ABCD is a parallelogram then $\angle A - \angle C$= .....degrees.

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8. In a rectangle ABCD, the diagonal $AC = 10cm$ then diagonal $BD =$ .....cm.

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9. In a square ABCD, the diagonal $\overline{AC}$ is drawn.

Then $\angle BAC =$ .....degrees.

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Do This

1. Find the ratio of: Rs 10 to 10000 paise

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2. Convert the given fractional numbers to per cents. 3/4 and 1/8.

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3. Identify two or more pairs of supplementary angles from the parallelogram ABCD given above.

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4. Write area of rectangle if the length is 7cm and breadth is 5 cm.

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5. Subtract 3xy + 5yz – 7zx from 5xy – 2yz – 2zx + 10xyz

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6. Identify two or more pairs of supplementary angles from the parallelogram ABCD given above.

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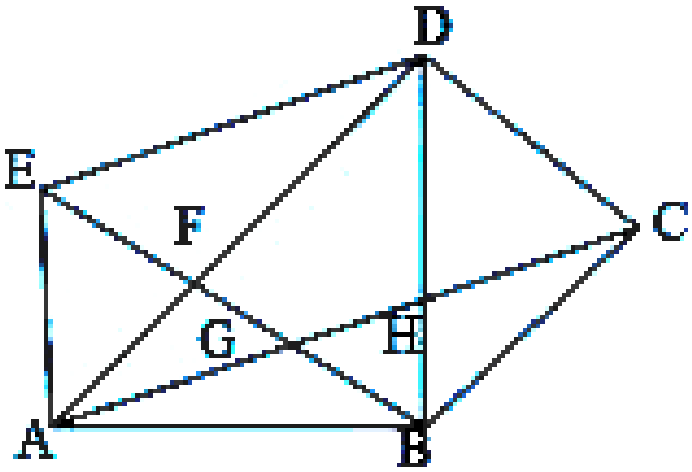
Try This

1. How many different quadrilaterals can be obtained from the adjacent figure? Name

them.



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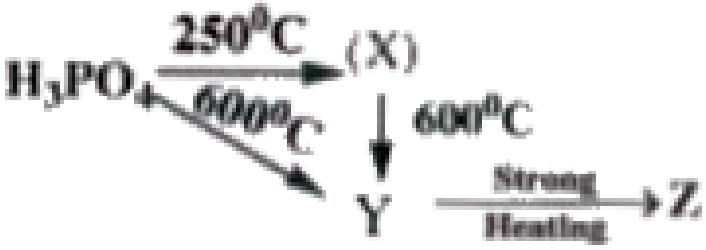
2.



Z is

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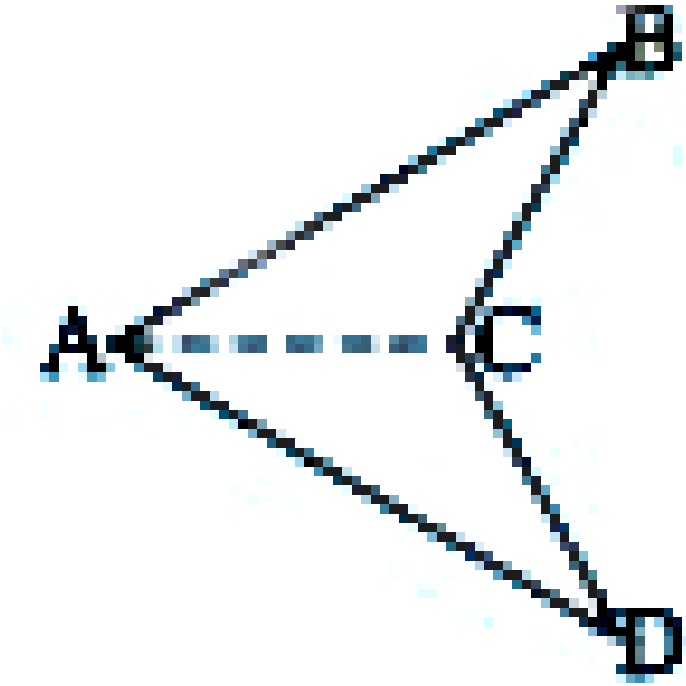
3. What would happen if the quadrilateral is not convex? Consider quadrilateral ABCD. Split it into two triangles and find the sum of the interior angles. What is the sum of interior

angles of a concave quadrilateral?



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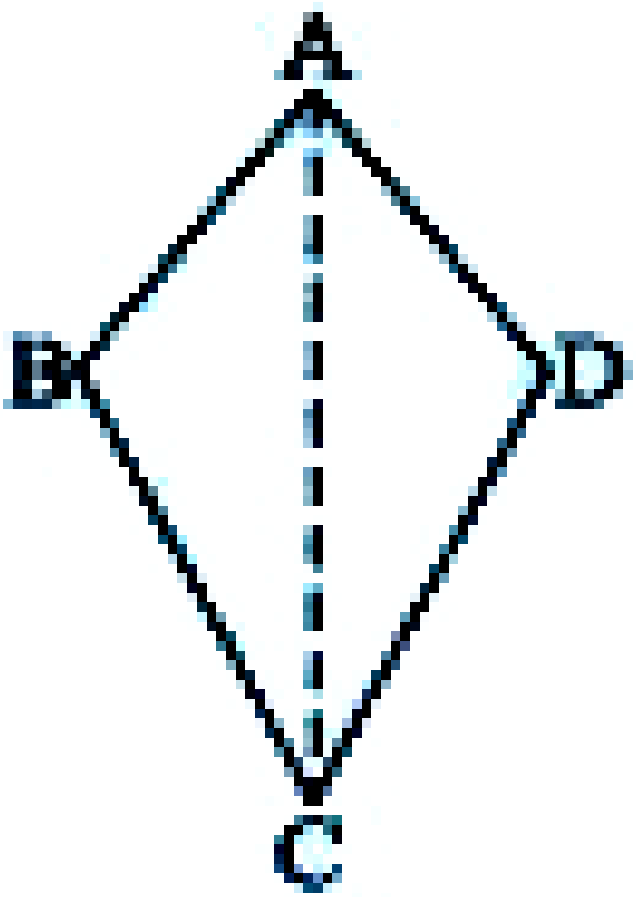
4. Prove that in a kite ABCD ΔABC and ΔADC are congruent.



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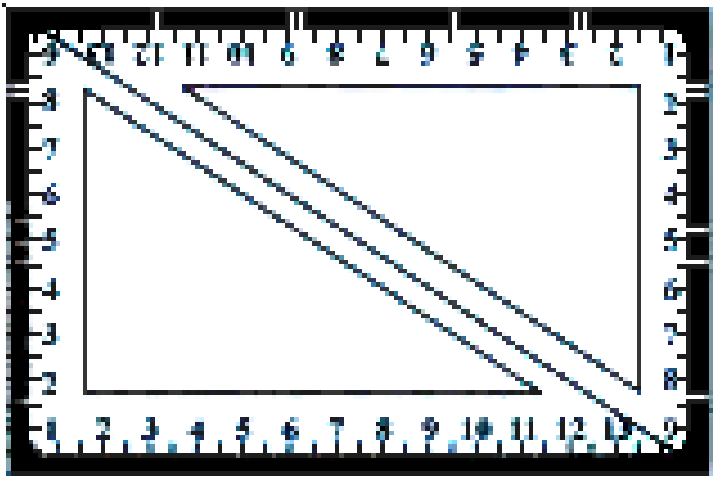
5. Take two identical set squares with angles $30^\circ - 60^\circ - 90^\circ$ and place them adjacently as shown in the adjacent figure. Does this help you to verify the above property? Can we say every rectangle is a parallelogram?



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6. Take two identical $30^\circ - 60^\circ - 90^\circ$ set squares and form a parallelogram as before. Does the figure obtained help you confirm the above property?

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7. In the below parallogram find $\angle I$ and $\angle G$ by any other method? (hint: angle-sum property

of a quadrilateral)

Watch Video Solution

8. How many different quadrilaterals can be obtained from the adjacent figure? Name

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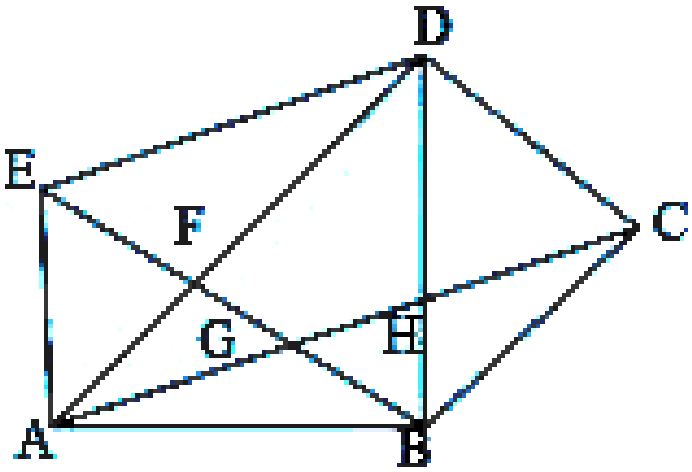

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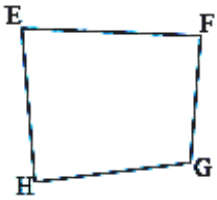

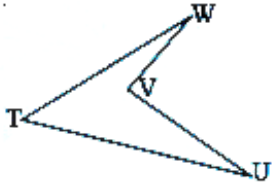

(i) Is quadrilateral EFGH a convex

quadrilateral?

(ii) Is quadrilateral TUVW a concave quadrilateral?

(iii) Draw both the diagonals for quadrilateral EFGH. Do they intersect each other?

(iv) Draw both the diagonals for quadrilateral TUVW. Do they intersect each other?

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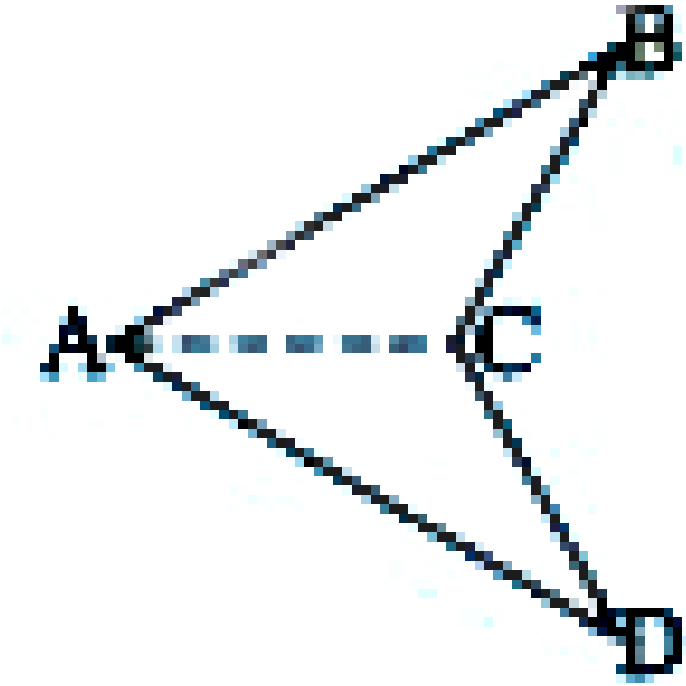

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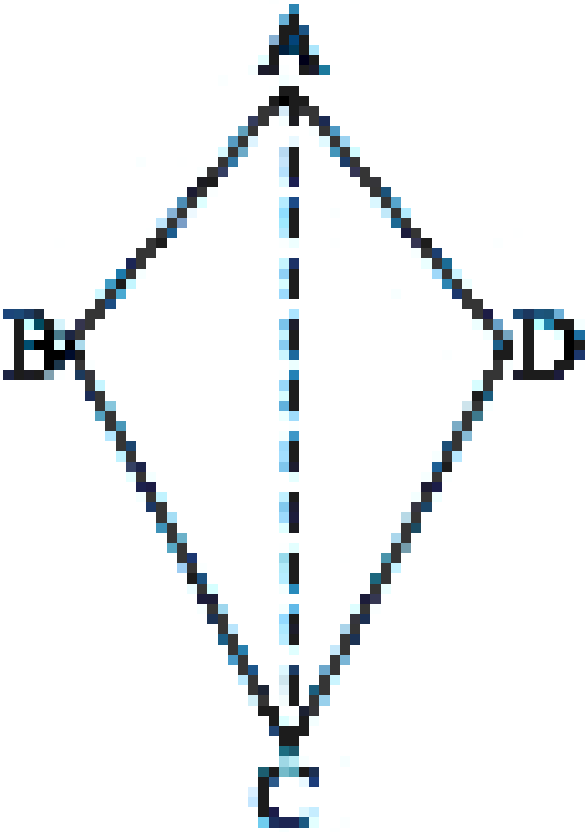

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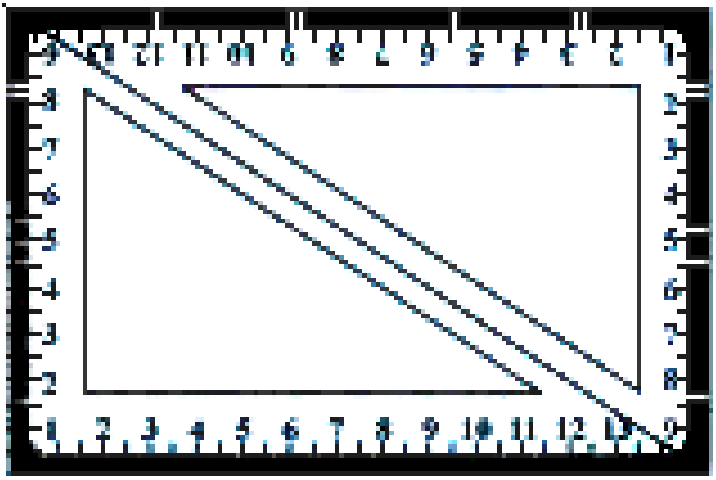

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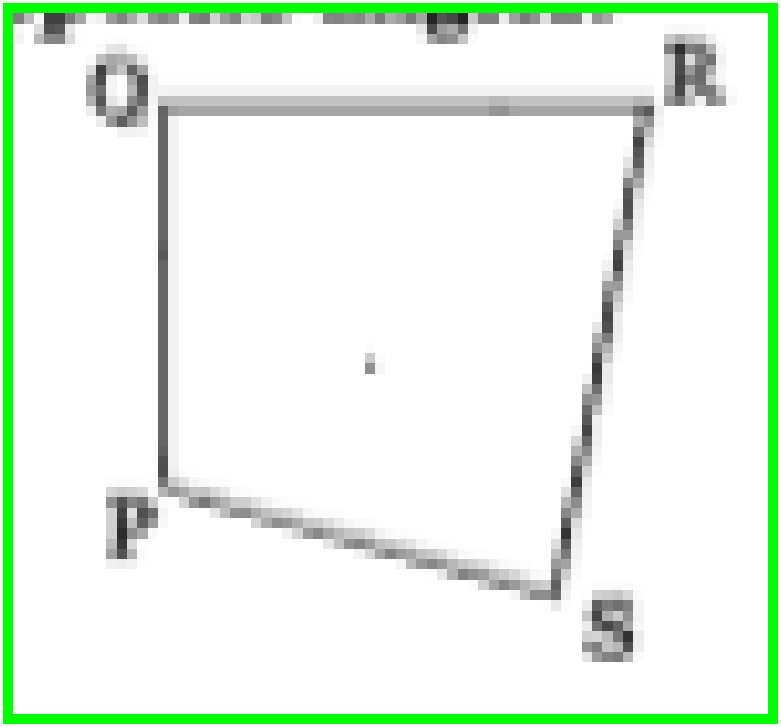

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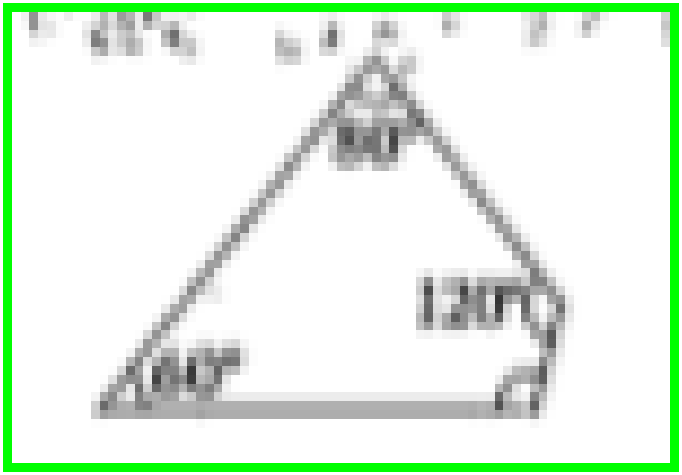

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Exercise 2 State Whether True Or False

1. State whether true or false: All the rectangles are squares (T/F)

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2. State whether true or false:All the rhombus are parallelogram (T/F)

Watch Video Solution

3. All squares are.....

Watch Video Solution

4. State whether true or false:All squares are not parallelograms(T/F)

Watch Video Solution

5. State whether true or false:All kites are rhombus(T/F)

Watch Video Solution

6. State whether true or false-

All rhombuses are kites

Watch Video Solution

7. State whether true or false:All parallelograms are trapeziums(T/F)

Watch Video Solution

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Watch Video Solution

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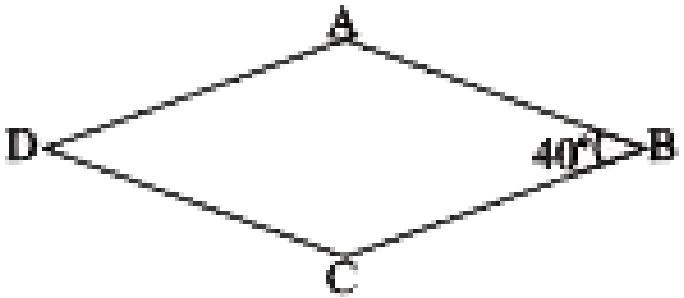

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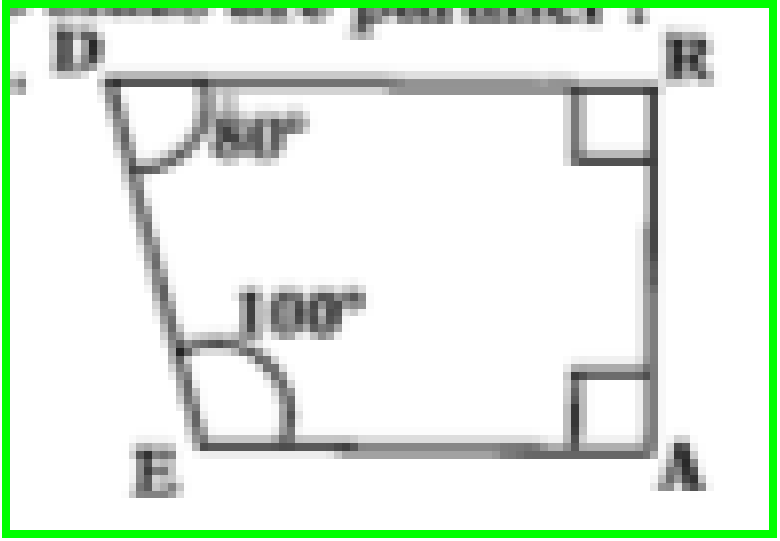

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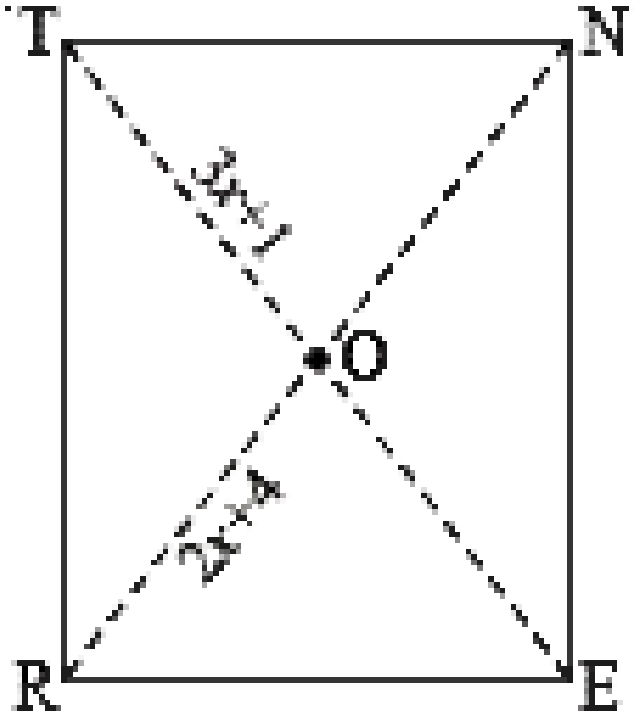

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