MATHS

BOOKS - PSEB

UNDERSTANDING QUADRILATERALS

Exercise

1. Given here are some figures.

(I)

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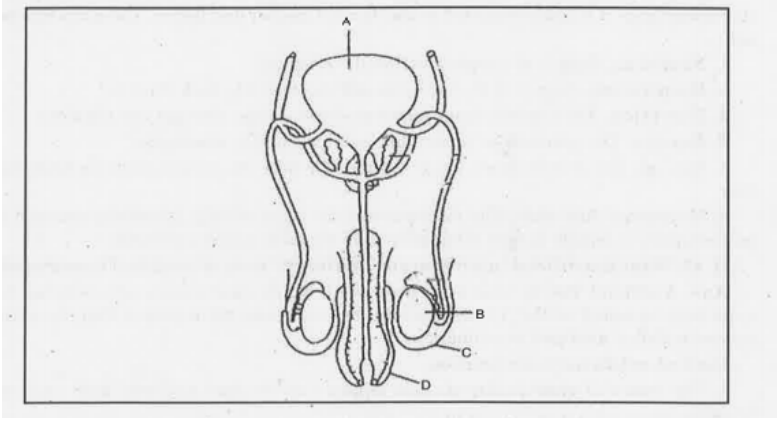
2. Label the parts of human male reproductive system?



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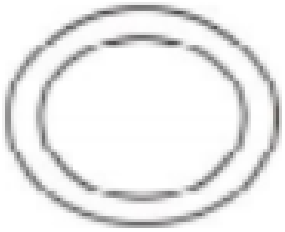
3. Small circle having radius 2m and large circle having radius 3 m find the area between

small and large area.



(3)

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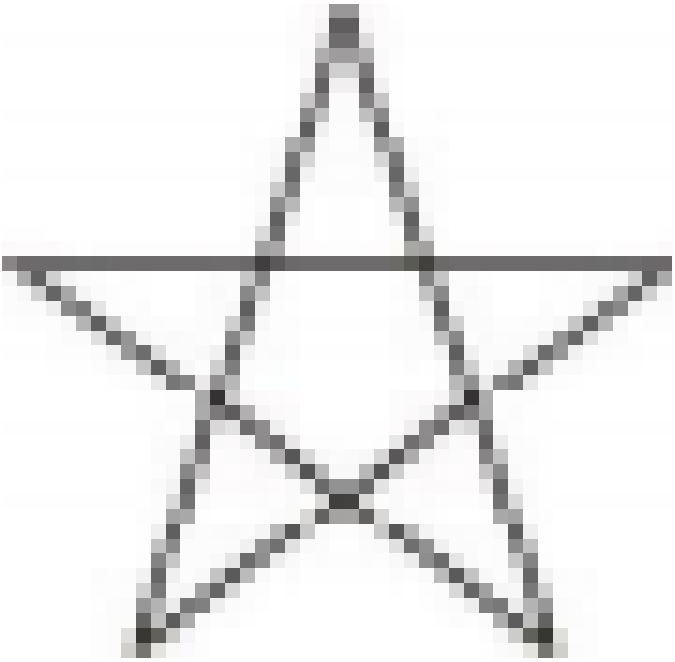
4. Given here are some figures.



(4)

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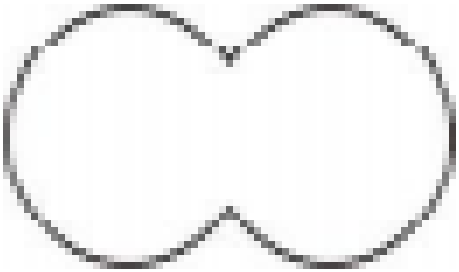
5. Given here are some figures.



(5)

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6. Explain this figures.

(6)

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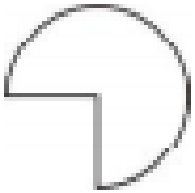
7. Explain this figures.



(7)

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8. If the increasing in time causes a corresponding decrease in the price of the product. identify the proportionality.

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9. Classify each of them on the basis of the following. Simple curve

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10. Classify each of them on the basis of the following. Simple closed curve

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11. Classify each of them on the basis of the following. Polygon

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12. Classify each of them on the basis of the following. Convex polygon

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13. Classify each of them on the basis of the following. Concave polygon

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14. How many diagonals does each of the following have? A convex quadrilateral

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15. How many diagonals does each of the following have? A regular hexagon

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16. How many diagonals does each of the following have? A triangle

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17. What is the sum of the measures of the angles of a convex quadrilateral? Will this property hold if the quadrilateral is not convex? (Make a non-convex quadrilateral and try!)

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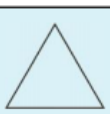
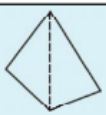
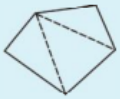
18. Examine the table. (Each figure is divided into triangles and the sum of the angles deduced from that.)

Figure				
Side	3	4	5	6
Angle sum	180°	$2 \times 180°$ $= (4-2) \times 180°$	$3 \times 180°$ $= (5-2) \times 180°$	$4 \times 180°$ $= (6-2) \times 180°$

What can you say about the angle sum of a convex polygon with number of sides? 8

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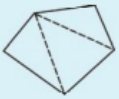
19. Examine the table. (Each figure is divided into triangles and the sum of the angles deduced from that.)

Figure				
Side	3	4	5	6
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What can you say about the angle sum of a convex polygon with number of sides? 8

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20. Examine the table. (Each figure is divided into triangles and the sum of the angles deduced from that.)

 What can you say about the angle sum of a convex polygon with number of sides? 10

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21. Examine the table. (Each figure is divided into triangles and the sum of the angles deduced from that.)

What can you say about the angle sum of a convex polygon with number of sides? n

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22. What is a regular polygon? State the name of a regular polygon of 3 sides

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23. What is a regular polygon? State the name of a regular polygon of 4 sides

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24. What is a regular polygon? State the name of a regular polygon of 6 sides

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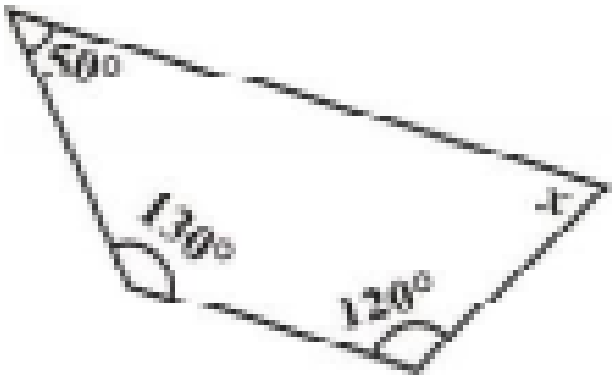
25. Find the angle measure x in the following figures.



(a)

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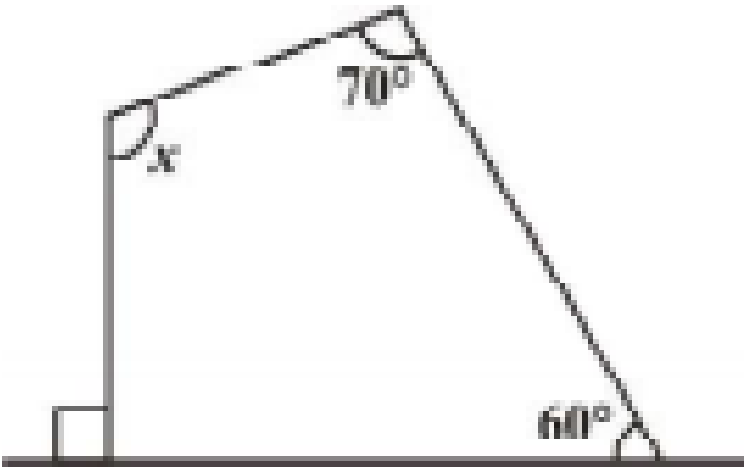
26. Find the angle measure x in the following figures.



(b)

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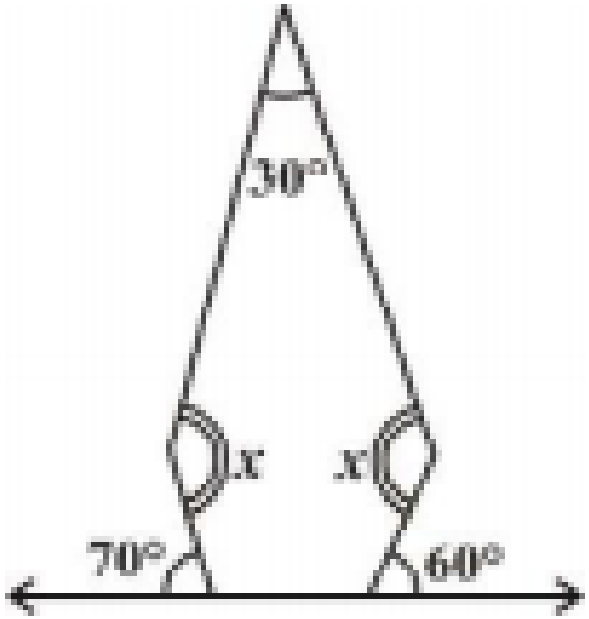
27. Find the angle measure x in the following figures.



(c)

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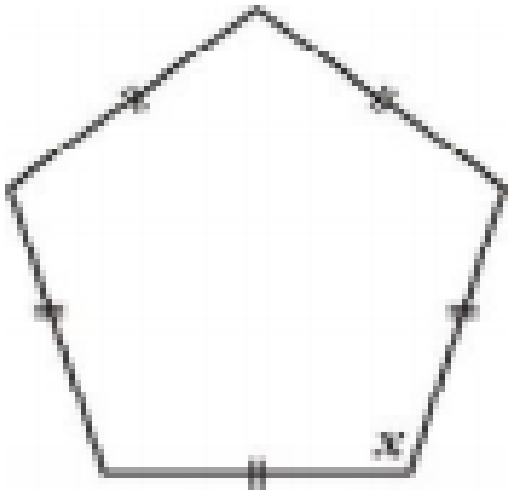
28. Find the angle measure x in the following figures.



(d)

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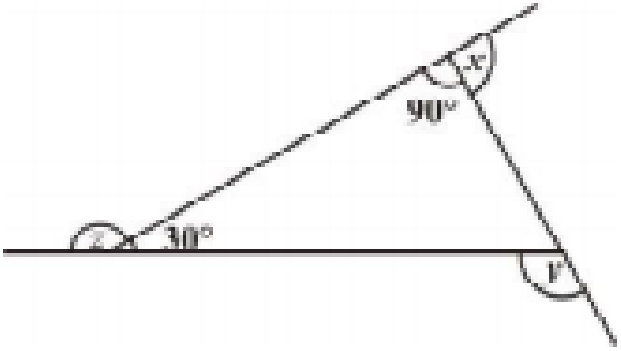
29. Find x+y+z



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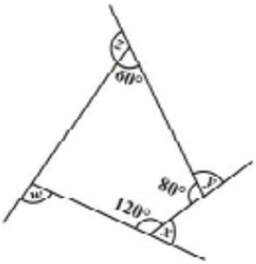
30. Find x+y+z+w



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31. Find measure x in Fig 3.9.

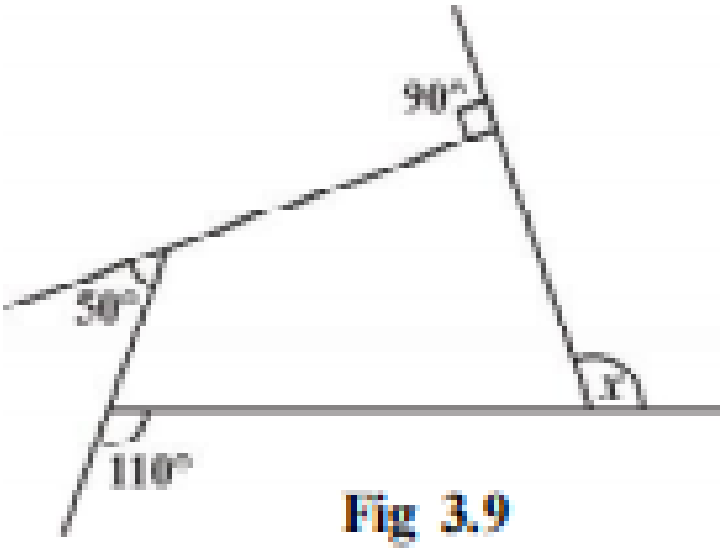

Fig 3.9

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32. Find the number of sides of a regular polygon whose each exterior angle has a

measure of 45°.

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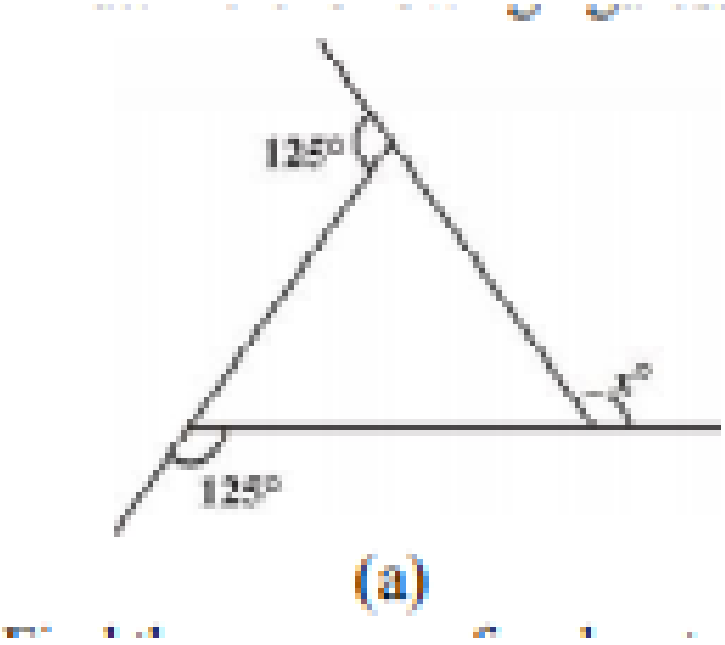
33. Find x in the following figures.



(a)

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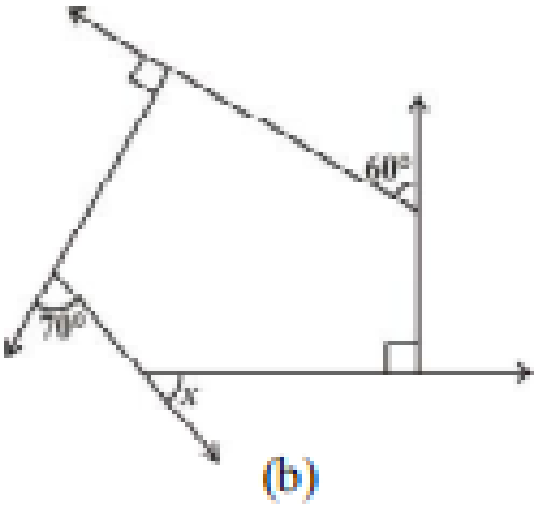
34. Find x in the following figures.



(b)

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

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36. Find the measure of each exterior angle of a regular polygon of 15 sides

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37. How many sides does a regular polygon have if the measure of an exterior angle is 24° ?

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38. How many sides does a regular polygon have if each of its interior angles is 165°?

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39. Is it possible to have a regular polygon with measure of each exterior angle as 22°?

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40. Can 22° be an interior angle of a regular polygon ? Why ?

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41. What is the minimum interior angle possible for a regular polygon? Why?

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42. What is the maximum exterior angle possible for a regular polygon?

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43. Find the perimeter of the parallelogram PQRS (Fig 3.22).

Fig 3.22

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44. In Fig 3.26, BEST is a parallelogram. Find the values x, y and z.

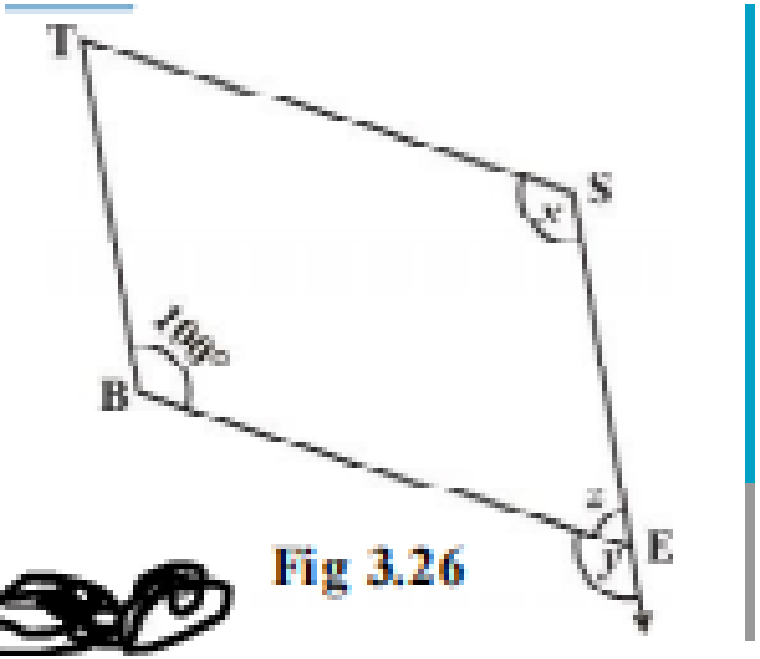

Fig 3.26

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45. In a parallelogram RING, (Fig 3.28) if angle R = 70°, find all the other angles.

Fig 3.28

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46. In Fig 3.31 HELP is a parallelogram. (Lengths are in cms). Given that OE = 4 and HL is 5 more

than PE? Find OH.

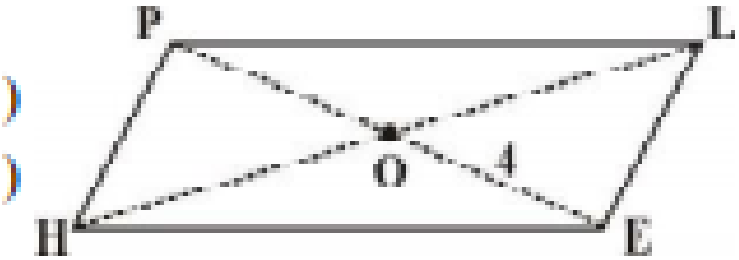

Fig 3.31

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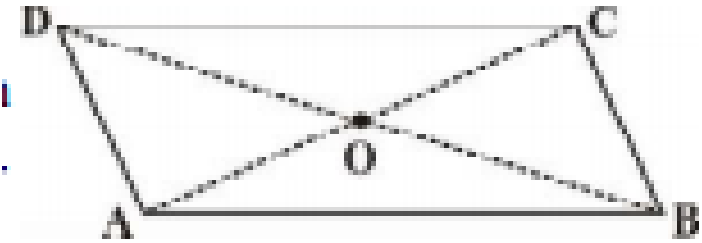
47. Given a parallelogram ABCD. Complete each statement along with the definition or

property used AD = ...



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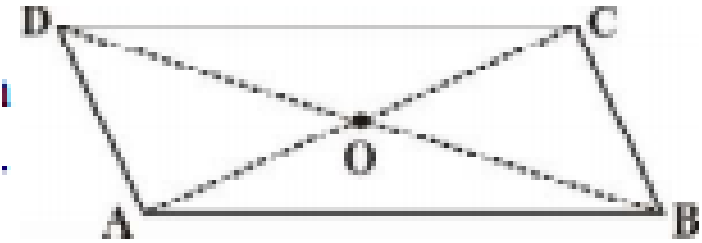
48. Given a parallelogram ABCD. Complete each statement along with the definition or

property used $\angle DCB$ = ...



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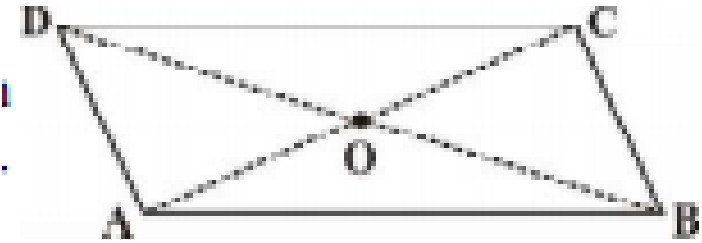
49. Given a parallelogram ABCD. Complete each statement along with the definition or

property used OC = ...



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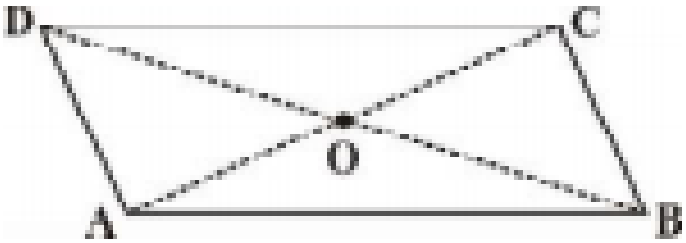
50. Given a parallelogram ABCD. Complete each statement along with the definition or

property used $m\angle DCB + m\angle CDA$ = ...



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51. Consider the following parallelograms. Find the values of the unknowns x, y, z.

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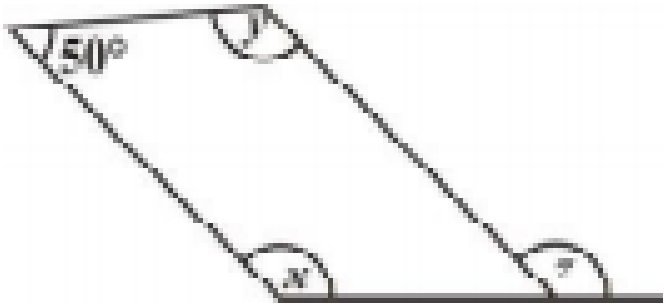
52. Consider the following parallelograms. Find the values of the unknowns x, y, z.



(ii)

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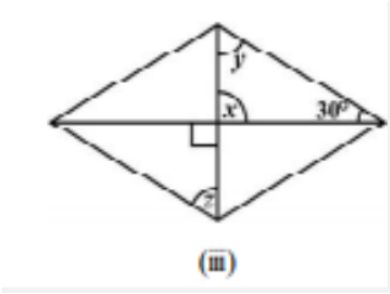
53. Consider the following parallelograms.

Find the values of the unknowns x, y, z.



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54. Consider the following parallelograms.

Find the values of the unknowns x, y, z.

(iv)

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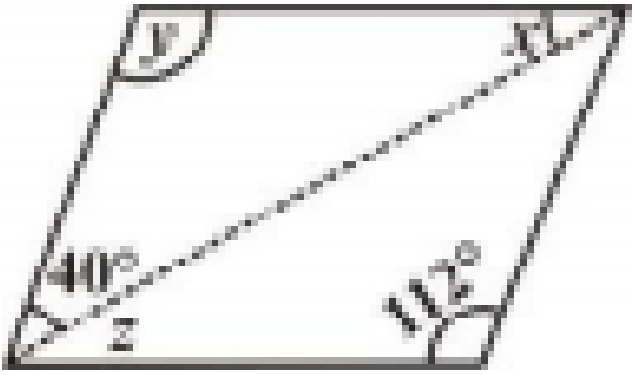
55. Consider the following parallelograms. Find the values of the unknowns x, y, z.



(v)

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56. Can a quadrilateral ABCD be a parallelogram if : $\angle D + \angle B = 180^\circ$?

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57. Can a quadrilateral ABCD be a parallelogram if :AB=DC=8cm,AD=4cm and BC =4.4cm?

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58. Can a quadrilateral ABCD be a parallelogram if : $\angle A = 70^\circ$ and $\angle C = 65^\circ$?

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59. Draw a rough figure of a quadrilateral that is not a parallelogram but has exactly two opposite angles of equal measure.

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

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

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

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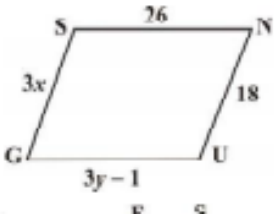
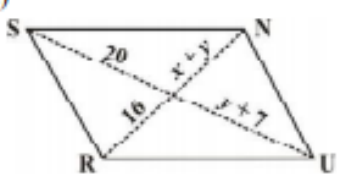
63. The following figures GUNS and RUNS are parallelograms. Find x and y. (Lengths are in cm)

(i)



(ii)



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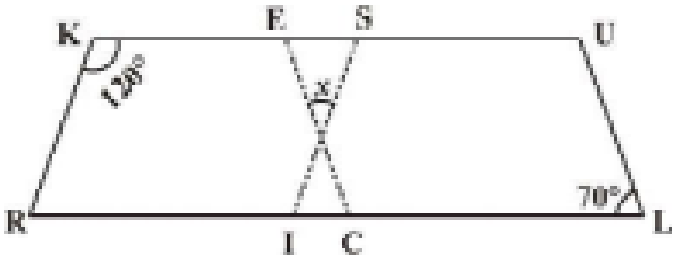
64.



In the above figure both RISK and CLUE are parallelograms. Find the value of x.

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65. Explain how this figure is a trapezium. Which of its two sides are parallel? (Fig 3.32)

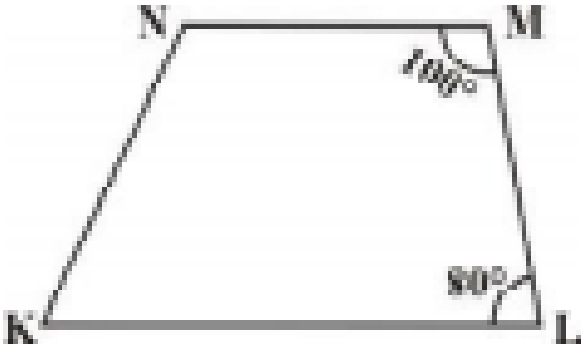

Fig 3.32

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66. Find $m\angle C$ in Fig 3.33 if $\overline{AB} \square \overline{DC}$

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67. FindThemeasure of of $\angle P$ and $\angle S$ if $\overline{SP} \square \overline{RQ}$ in fig 3.34

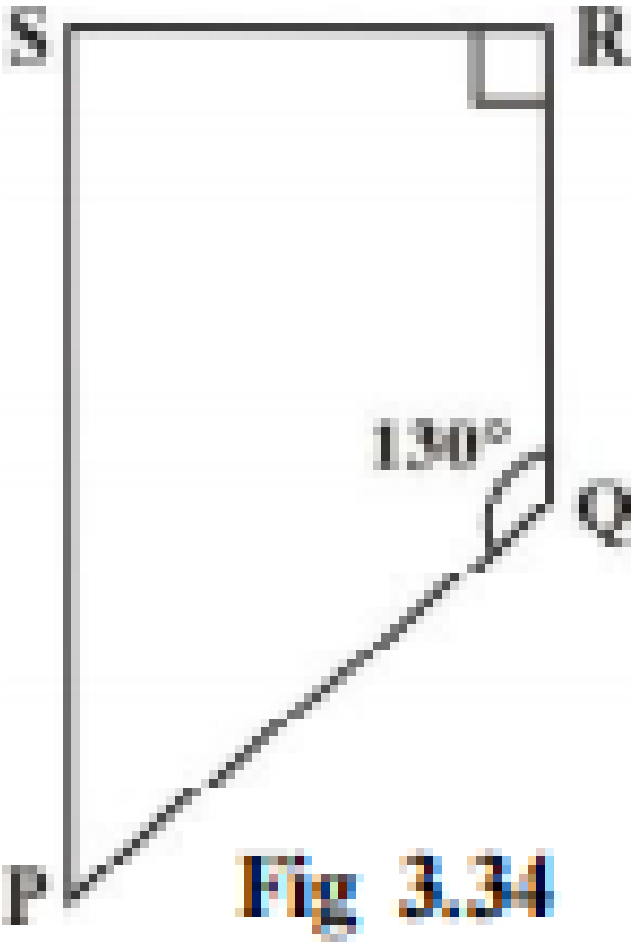

Fig 3.34

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68. RICE is a rhombus (Fig 3.36). Find x, y, z. Justify your findings.

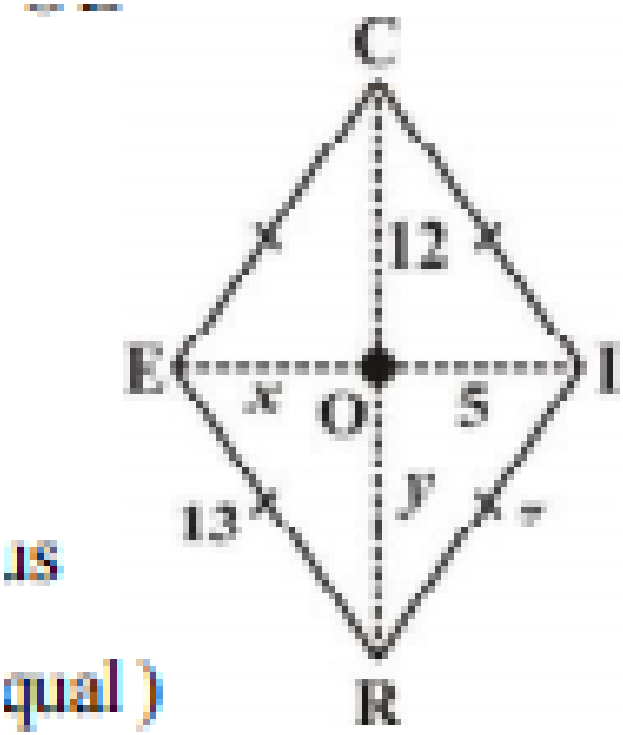

Fig 3.36

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69. RENT is a rectangle (Fig 3.41). Its diagonals meet at O. Find x, if OR = 2x + 4 and OT = 3x + 1.

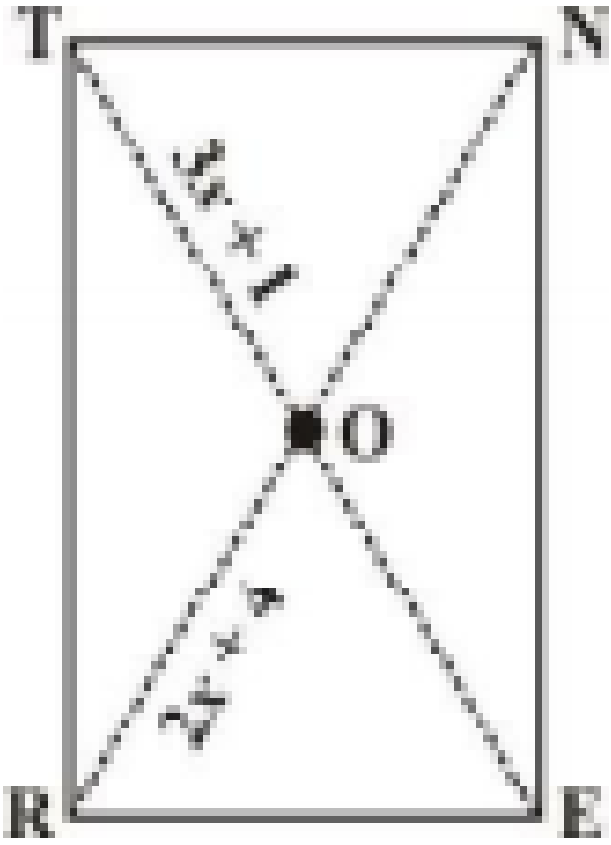

Fig 3.41

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70. State whether True or False. All rectangles are squares

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71. State whether True or False. All kites are rhombuses.

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72. State whether True or False. All rhombuses are parallelograms

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73. State whether True or False. All rhombuses are kites.

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74. State whether True or False. All squares are rhombuses and also rectangles

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75. State whether True or False. All parallelograms are trapeziums.

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76. State whether True or False. All squares are not parallelograms.

Watch Video Solution

77. State whether True or False. All squares are trapeziums.

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78. Identify all the quadrilaterals that have. four sides of equal length

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79. Identify all the quadrilaterals that have. four right angles

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80. Explain how a square is. a quadrilateral

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81. Explain how a square is. a parallelogram

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82. Explain how a square is. a rhombus

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83. Explain how a square is. a rectangle

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84. Name the quadrilaterals whose diagonals. bisect each other

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85. Name the quadrilaterals whose diagonals. are perpendicular bisectors of each other

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86. Name the quadrilaterals whose diagonals. are equal

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87. Explain why a rectangle is a convex quadrilateral.

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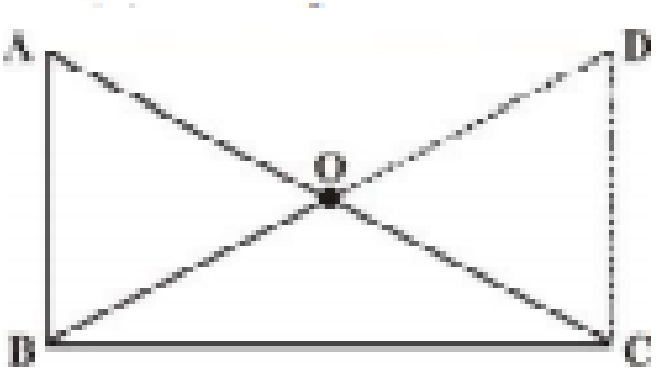
88. ABC is a right-angled triangle and O is the mid point of the side opposite to the right angle. Explain why O is equidistant from A, B and C. (The dotted lines are drawn additionally to help you).



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