

Understanding Quadrilaterals

<1M>

1. The angle between the altitudes of a parallelogram, through the same vertex of an obtuse angle of the parallelogram is 60 degree. Find the angles of the parallelogram.

(A) 150° , 120° , 60° and 30°

(B) 150° , 150° , 30° and 30°

(C) 120° , 60° , 90° and 45°

(D) None of them

2. A simple closed curve made up of only line segments is called a

(A) Circle

(B) Polygon

(C) Line segment

(D) None of them

3. Two adjacent sides of a parallelogram are 5 cm and 4 cm respectively. Find its perimeter.

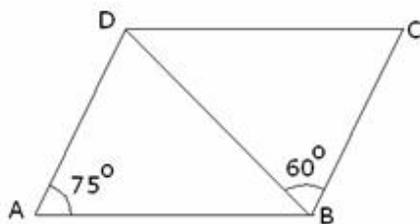
(A) 18 cm

(B) 14 cm

(C) 10 cm

(D) 16 cm

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



(A) 30° , 60°

(B) 90° , 30°

(C) 45° , 60°

(D) 60° , 35°

5. The diagonal of a rhombus are 6 cm and 8 cm, find the length of all sides of rhombus.

(A) 3 cm

- (B) 6 cm
- (C) 4 cm
- (D) 5 cm

6. The point of intersection of the diagonal of a quadrilateral divides one diagonal in the ratio 1:2. Can it be a parallelogram?

- (A) No
- (B) Yes
- (C) May be
- (D) None of them

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

- (A) 6
- (B) 8
- (C) 12
- (D) 5

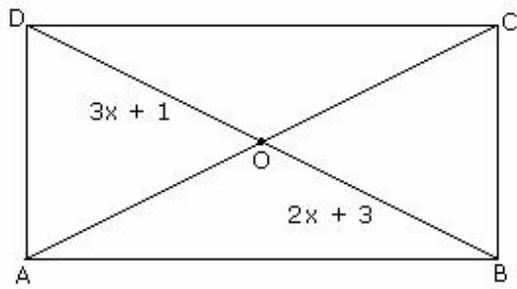
8. Diagonals of a square are equal and bisect each other at.

- (A) 90°
- (B) 60°
- (C) 75°
- (D) None of them

9. Which of the following statement is true?

- (A) Opposite angles are supplementary in parallelogram.
- (B) Diagonals bisect each other at right angle in rectangle.
- (C) Diagonals are not equal in square.
- (D) Diagonals bisect each other at right angle in rhombus.

10. In the given figure, ABCD is a rectangle. Its diagonals meet at O. Find x, if $OB = 2x + 3$ and $OD = 3x + 1$.



- (A) 1
- (B) 2
- (C) 3
- (D) 4

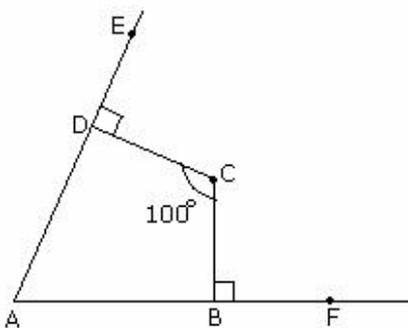
11. How many diagonals does a regular hexagon have?

- (A) 9
- (B) 5
- (C) 7
- (D) 8

12. The angles of a quadrilateral are in the ratio 3: 4: 5: 6. Find the measure of each angle.

- (A) 60° , 90° , 100° and 110°
- (B) 75° , 85° , 90° and 110°
- (C) 60° , 80° , 100° and 120°
- (D) 80° , 85° , 95° and 100°

13. In the given figure, find the measure of $\angle BAD$.



- (A) 80°
- (B) 70°
- (C) 90°

(D) 105°

14. If an angle of a parallelogram is two-third of its adjacent angle; find these two angles of the parallelogram.

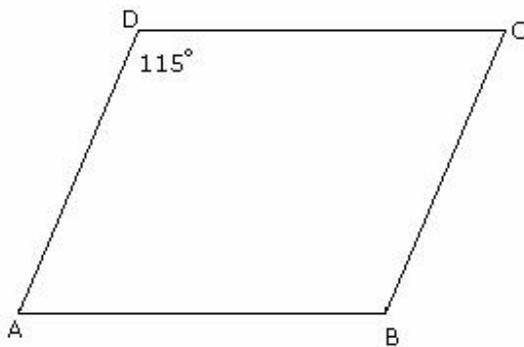
(A) $108^\circ, 72^\circ$

(B) $110^\circ, 70^\circ$

(C) $100^\circ, 80^\circ$

(D) $120^\circ, 60^\circ$

15. In the given figure, ABCD is a parallelogram and angle D = 115° . Determine the measure of angle A and angle B.



(A) $60^\circ, 45^\circ$

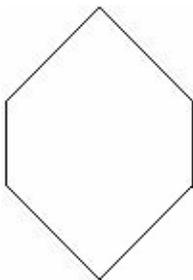
(B) $65^\circ, 115^\circ$

(C) $45^\circ, 65^\circ$

(D) $30^\circ, 75^\circ$

16. In the following polygons, which of the polygon is concave polygon?

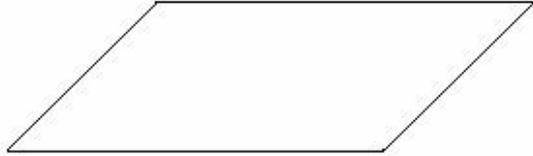
(A)



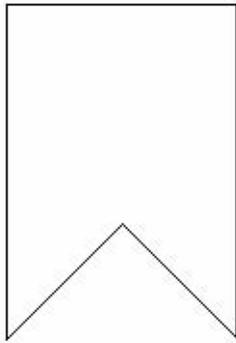
(B)



(C)



(D)



17. Two adjacent sides AB and BC of a parallelogram ABCD are in the ratio of 5:3. If the perimeter is 200 cm, find the lengths of AB and BC.

(A) 25 cm, 50 cm

(B) 40 cm, 37.50 cm

(C) 62.50 cm, 37.50 cm

(D) 60 cm, 62.50 cm

(A) 75° , 105°

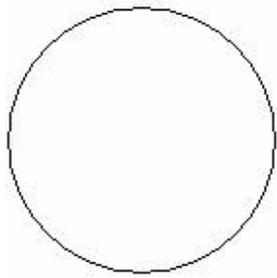
(B) 80° , 100°

(C) 85° , 95°

(D) 73° , 107°

18. In the following figure, which of the polygon is octagon?

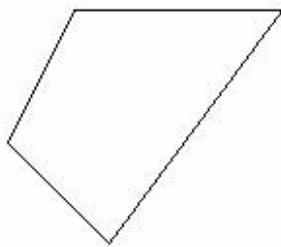
(A)



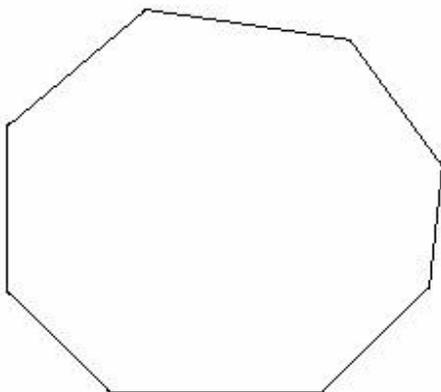
(B)



(C)

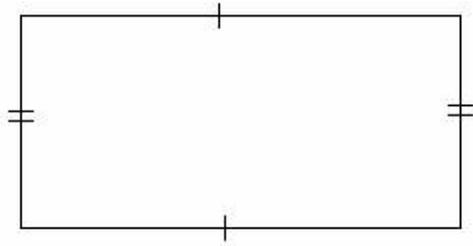


(D)

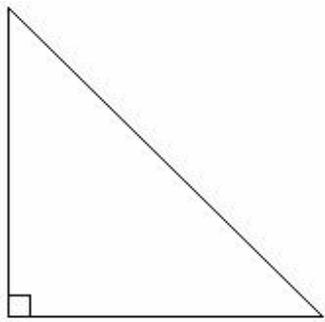


19. In the following polygon, which of the polygon is regular polygon?

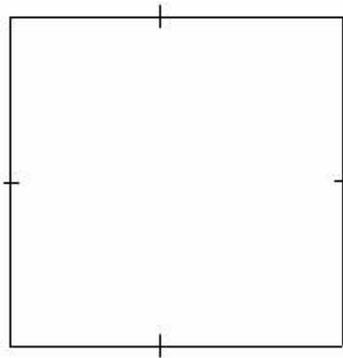
(A)



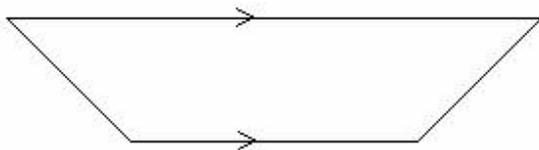
(B)



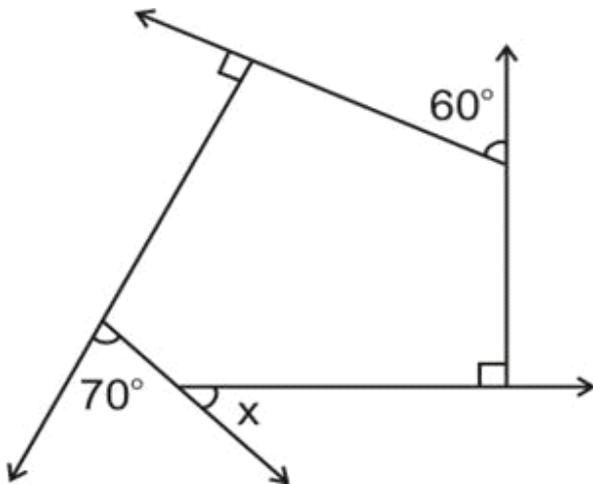
(C)



(D)



20. Find the angle measures x in the following figure:

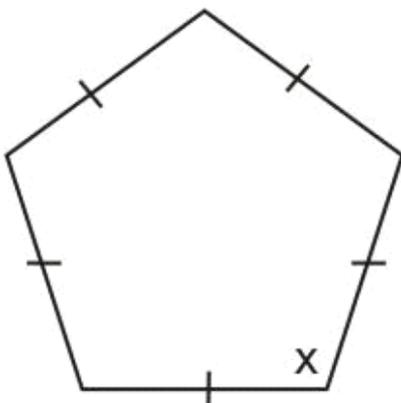


- (A) 60°
- (B) 50°
- (C) 45°
- (D) 90°

21. The sum of the measures of the external angles of any polygon is

- (A) 180°
- (B) 360°
- (C) 270°
- (D) 540°

22. Find x in the following figure:



- (A) 110°
- (B) 108°
- (C) 105°
- (D) 100°

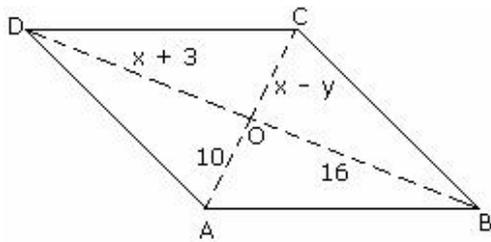
23. Find the measure of each exterior angle of a regular polygon of 9 sides.

- (A) 45°
- (B) 60°
- (C) 40°
- (D) 35°

24. Which of the following statement is false in the following statements?

- (A) The opposite sides of a parallelogram are of equal length.
- (B) A kite has 4 sides.
- (C) The opposite angles of a parallelogram are of equal measure.
- (D) The adjacent angles in a parallelogram are complementary

25. In the given figure, ABCD is a parallelogram. Determine x and y. (Lengths are in m)

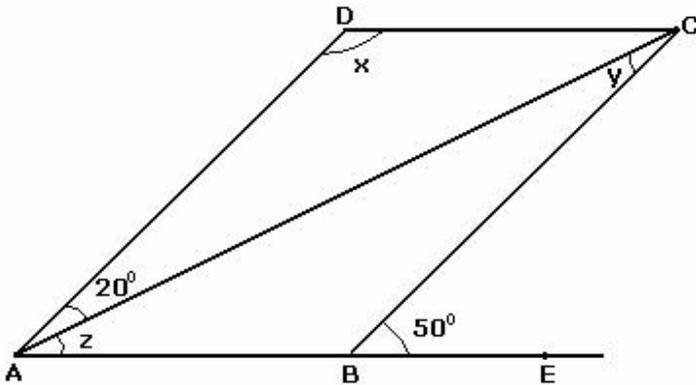


- (A) 13, 2
- (B) 13, 3
- (C) 3, 14
- (D) 12, 4

26. 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.

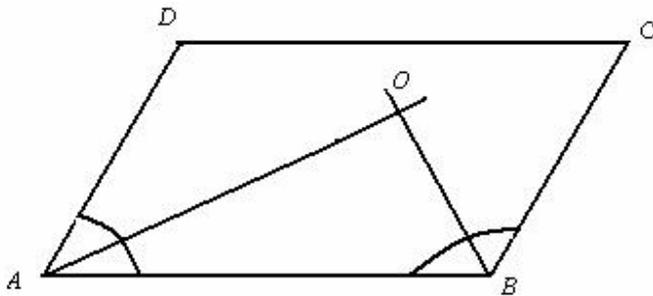
- (A) 120° , 60° , 90° and 90°
- (B) 110° , 70° , 90° and 90°
- (C) 100° , 70° , 90° and 90°
- (D) 108° , 108° , 72° and 72°

27. In the given figure, ABCD is a parallelogram. Find the angle measures x, y and z.



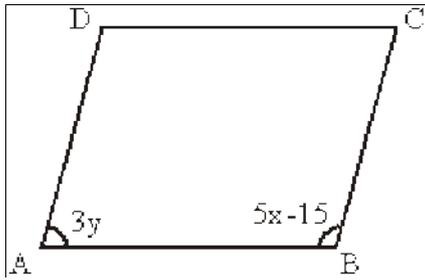
- (A) 110° , 20° and 30°
- (B) 130° , 20° and 30°
- (C) 120° , 20° and 40°
- (D) 120° , 30° and 40°

28. In a parallelogram ABCD. The bisector of angle A and angle B meet at O. Measurement of angle AOB.



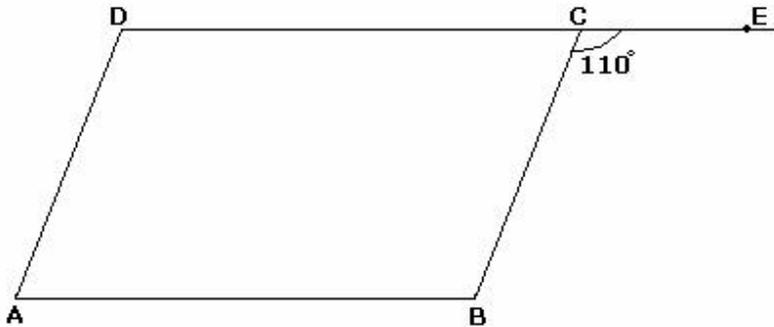
- (A) 45°
- (B) 90°
- (C) 75°
- (D) 120°

29. In the adjoining figure, ABCD is a parallelogram. If $x - y = 15$, find x and y?



- (A) $60^\circ, 30^\circ$
- (B) $45^\circ, 60^\circ$
- (C) $45^\circ, 30^\circ$
- (D) $30^\circ, 15^\circ$

30. In the adjoining figure, ABCD is a parallelogram. Side DC of the parallelogram is produced to E. If exterior $\angle C = 110^\circ$, then find $\angle ABC$



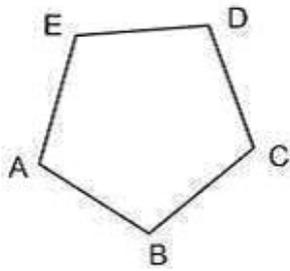
- (A) 60°
- (B) 110°
- (C) 120°
- (D) 90°

31. ABCD is a parallelogram, in which $\angle A = 4x - 15$ and $\angle B = 5x - 3$. Find the measure of $\angle A$ and $\angle B$.

32. One angle of a quadrilateral is 150° and the other three angles are equal. Find the measure of other three angles

- (A) 75°
- (B) 85°
- (C) 95°
- (D) 70°

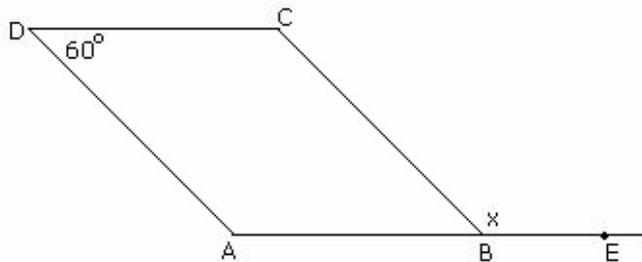
33. Find the sum of the angles in the given figure



34. Find the measure of all the angles of a || gm, if one angle is 24° less than twice the smallest angle.

- (A) $60^\circ, 60^\circ, 120^\circ$ and 120°
- (B) $45^\circ, 45^\circ, 120^\circ$ and 120°
- (C) $65^\circ, 65^\circ, 125^\circ$ and 125°
- (D) $68^\circ, 68^\circ, 112^\circ$ and 112°

35. In the given figure, ABCD is a parallelogram. Determine the measure of x.

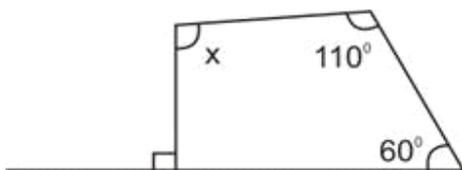


- (A) 135°
- (B) 60°
- (C) 120°
- (D) 90°

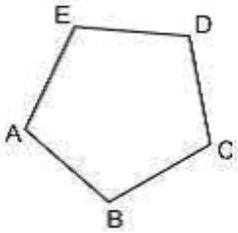
36. Find the measure of each exterior angles of a regular polygon of 9 sides.

37. Find the number of sides of a regular Polygon. Whose each exterior angle has a measure of 60° .

38. Find X in the following figure.



39. Find the sum of the angles in the following figure.



40. Find the angle measure of x in fig 1.

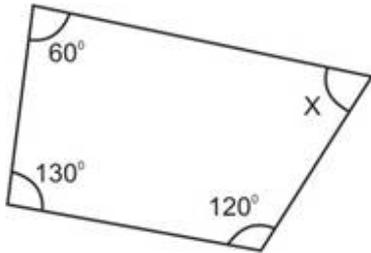
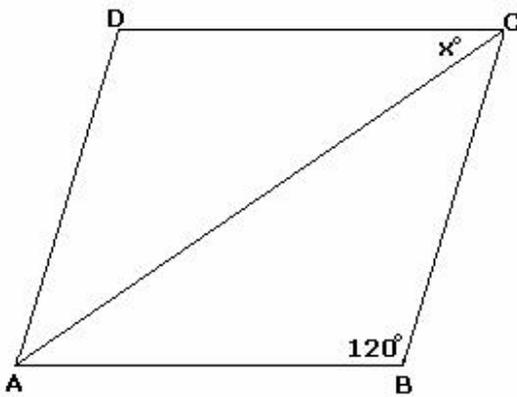


Fig. 1

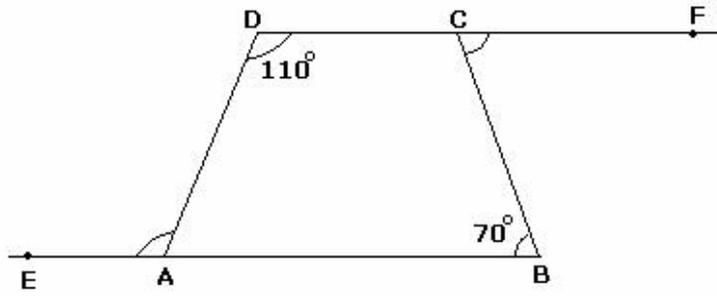
41. State the name of a regular polygon of 8 sides

42. In the given figure, ABCD is a rhombus. Find the value of x .



- (A) 45°
- (B) 30°
- (C) 60°
- (D) 40°

43. The sides BA and DC of a quadrilateral ABCD are produced as shown in the given figure. Find the sum of angle EAD and angle BCF.

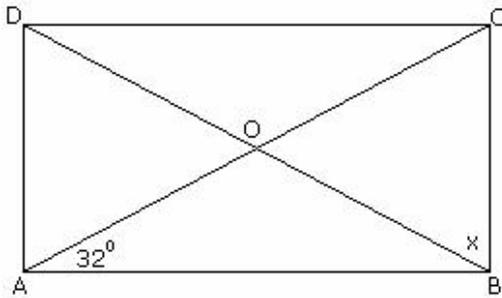


- (A) 200°
- (B) 180°
- (C) 150°
- (D) 210°

44. In the given figure, ABCD is a parallelogram. Find $\angle D$.

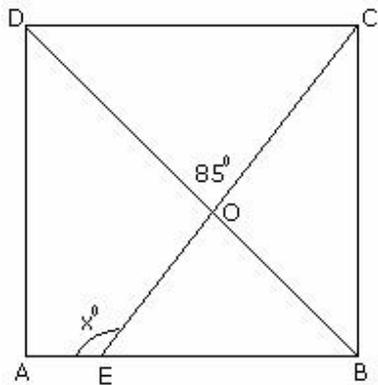
- (A) 105°
- (B) 95°
- (C) 115°
- (D) 125°

45. In the given figure, ABCD is a rectangle. Find the value of x .



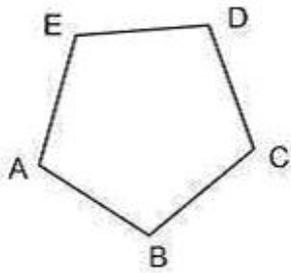
- (A) 48°
- (B) 68°
- (C) 45°
- (D) 58°

46. In the given figure, ABCD is a square. Find the value of x .



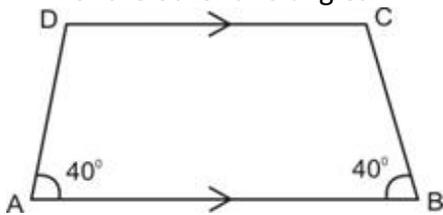
- (A) 120°
- (B) 130°
- (C) 110°
- (D) 100°

47. How many diagonals can be there in fig .

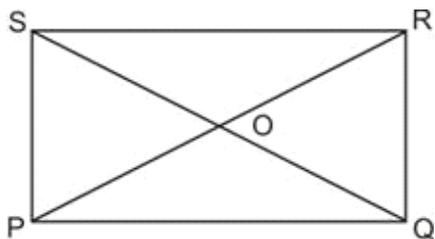


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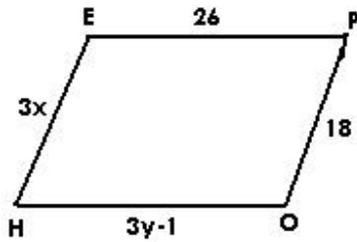
48. ABCD is a Trapezium in which $AB \parallel DC$. If $\angle A = \angle B = 40^\circ$. what are the measures of the other two angles.



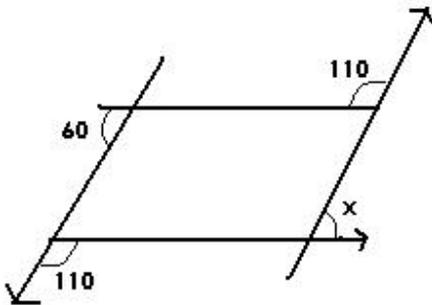
49. In a Parallelogram PQRS, given that $OQ = 4\text{cm}$, and PR is 5 more than SQ. Find OP.



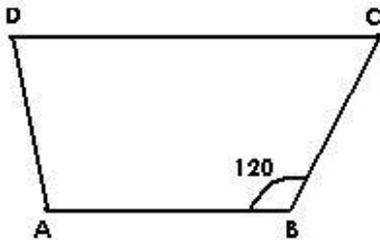
50. In a parallelogram HOPE, find x and y .



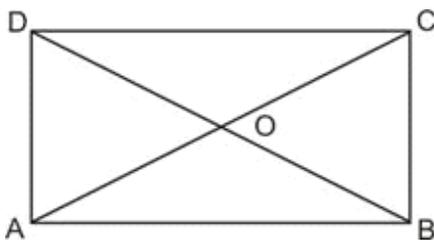
51. Find the measure of x in the following figure.



52. Find $m\angle C$ in the following figure ABDC.



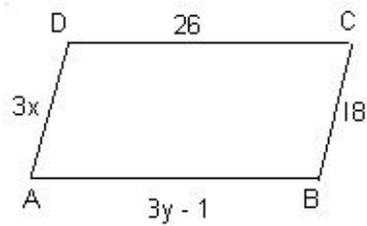
53. Diagonal AC and BD of a rectangle ABCD intersect each other at a point O in the following fig. If $OA = 5\text{cm}$. Find AC and BD.



54. Two adjacent angles of a Parallelogram are in the ratio of 2 : 3. Find all the 4 angles of the Parallelogram.

55. Length of two adjacent sides of a Parallelogram are $4c$ and $3c$. Find its perimeter.

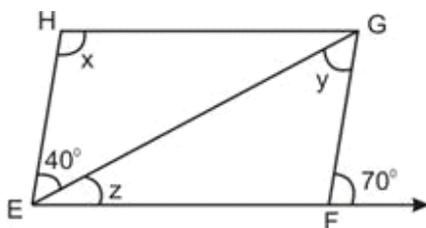
56. In the following figure, given a parallelogram ABCD. Find x and y .



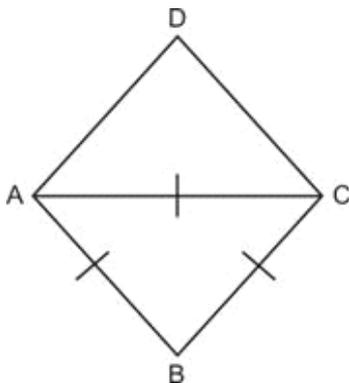
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57. Two adjacent angles of a parallelogram have equal measure. Find the measures of each of the angles of the parallelogram.

58. EFGH is a Parallelogram. Find the angle measure x , y , and z . Also give the properties used to find the angles.



59. Diagonal AC of a rhombus ABCD is equal to one of its sides BC. Find all the angles of Rhombus.



60. Name the Quadrilaterals whose diagonals

(i) Bisect each other

(ii) Are perpendicular bisector of each other

(iii) Are equal

61. Two adjacent angles of a Parallelogram are $(3x - 4)$ and $(3x + 10)$. Find the angles of the Parallelograms.

62. Given, a rectangle ABCD in the following figure and its diagonals meet at O.

Find x , if $OA = 2x + 4$ and $OD = 3x + 1$.

And also find BD.

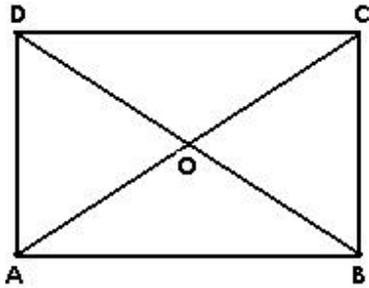


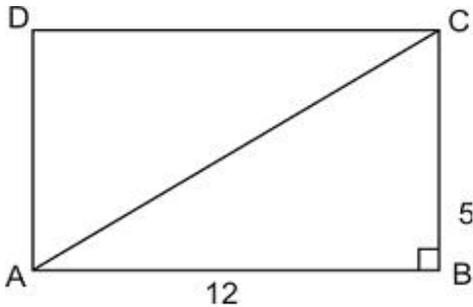
Fig.

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63. Fill in the blanks.

- a) A Parallelogram having all sides equal is called a -----
- b) A rectangles with a pass of adjacent sides equal is a -----
- c) A quadrilateral having exactly one pair of parallel sides is called ----
- d) A Parallelogram with each angles a right angles is called -----
- e) A quadrilateral with each pair of opposite sides parallel is called a -----

64. Find the length of the diagonal of a rectangles whose sides are 12 cm and 5cm.



65. Length 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.

