

EduSahara™ Learning Center Assignment

Grade : Class IX, ICSE

Chapter : Quadrilaterals

Name : Quadrilateral Angle Properties

1. In parallelogram ABCD, if $\angle C = 65.81^\circ$, then find the value of $\angle A$

- (i) 65.81° (ii) 67.81° (iii) 66.81° (iv) 64.81° (v) 63.81°

2. If the opposite angles of a parallelogram are supplementary, the measure of each of its angles is

- (i) 92° (ii) 88° (iii) 90° (iv) 91° (v) 89°

3. The sum of the interior angles of a quadrilateral is

- (i) 360° (ii) 180° (iii) 270° (iv) 90°

4. The angles of a quadrilateral OPQR are in the ratio 14 : 8 : 10 : 28 .

Find the measure of each angle of the quadrilateral.

- (i) $O = 86^\circ$, $P = 47^\circ$, $Q = 58^\circ$, $R = 169^\circ$
 (ii) $O = 82^\circ$, $P = 50^\circ$, $Q = 59^\circ$, $R = 169^\circ$
 (iii) $O = 85^\circ$, $P = 47^\circ$, $Q = 62^\circ$, $R = 166^\circ$
 (iv) $O = 83^\circ$, $P = 46^\circ$, $Q = 61^\circ$, $R = 170^\circ$
 (v) $O = 84^\circ$, $P = 48^\circ$, $Q = 60^\circ$, $R = 168^\circ$

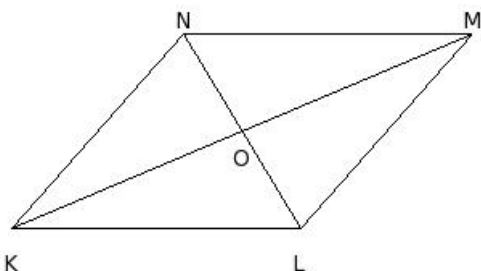
5. Two adjacent angles of a parallelogram EFGH are in the ratio 12 : 48 .

Find the measure of each of its angles.

- (i) $E = 38^\circ$, $F = 143^\circ$, $G = 34^\circ$, $H = 145^\circ$
 (ii) $E = 34^\circ$, $F = 146^\circ$, $G = 35^\circ$, $H = 145^\circ$
 (iii) $E = 36^\circ$, $F = 144^\circ$, $G = 36^\circ$, $H = 144^\circ$
 (iv) $E = 37^\circ$, $F = 143^\circ$, $G = 38^\circ$, $H = 142^\circ$
 (v) $E = 35^\circ$, $F = 142^\circ$, $G = 37^\circ$, $H = 146^\circ$

6. In the adjoining figure, KLMN is a parallelogram in which

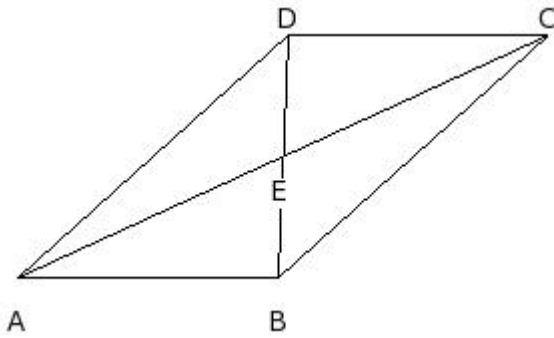
$\angle NKM = 25.51^\circ$, $\angle MKL = 22.76^\circ$, $\angle NOM = 98.34^\circ$. Calculate $\angle KLN$



- (i) 58.90° (ii) 57.90° (iii) 59.90° (iv) 56.90° (v) 60.90°

7. In the adjoining figure, ABCD is a parallelogram in which

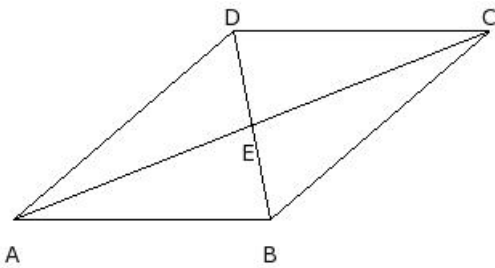
$\angle DAC = 17.43^\circ$, $\angle CAB = 24.44^\circ$, $\angle DEC = 62.54^\circ$. Calculate $\angle CDB$



- (i) 91.02° (ii) 94.02° (iii) 93.02° (iv) 95.02° (v) 92.02°

8. In the adjoining figure, ABCD is a parallelogram in which

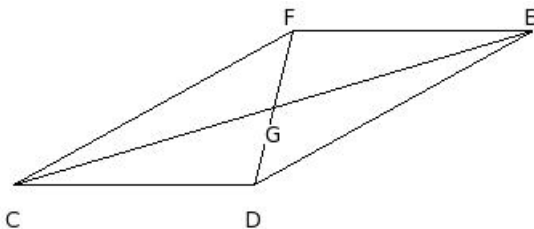
$\angle DAC = 19.1^\circ$, $\angle CAB = 21.4^\circ$, $\angle DEC = 78.96^\circ$. Calculate $\angle BCA$



- (i) 21.10° (ii) 17.10° (iii) 19.10° (iv) 18.10° (v) 20.10°

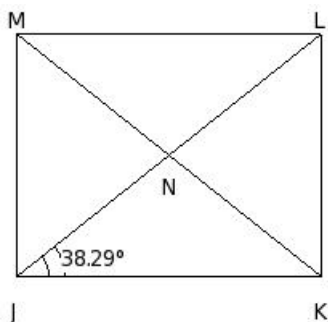
9. In the adjoining figure, CDEF is a parallelogram in which

$\angle FCE = 12.38^\circ$, $\angle ECD = 16.5^\circ$, $\angle FGE = 59.46^\circ$. Calculate $\angle FDE$



- (i) 47.07° (ii) 48.07° (iii) 45.07° (iv) 49.07° (v) 46.07°

10. In the adjoining figure, JKLM is a rectangle. If $\angle LJK = 38.29^\circ$, find $\angle MNL$



- (i) 102.42° (ii) 101.42° (iii) 105.42° (iv) 103.42° (v) 104.42°

11. Three angles of quadrilateral measure 75.73° , 76.33° and 112.72° respectively. Find the measure of the fourth

angle

- (i) 95.22° (ii) 93.22° (iii) 96.22° (iv) 97.22° (v) 94.22°

12. Three angles of a quadrilateral are equal and the fourth angle measure 56.25° . What is the measure of each of the equal angles?

- (i) 101.25° (ii) 102.25° (iii) 100.25° (iv) 99.25° (v) 103.25°

13. Two angles of a quadrilateral are of measure 138.94° and 50.87° respectively and the other two angles are equal. Find the measure of each of the equal angles.

- (i) 87.09° (ii) 85.09° (iii) 86.09° (iv) 83.09° (v) 84.09°

14. A quadrilateral has three acute angles, each measuring 68° . What is the measure of its fourth angle?

- (i) 156.00° (ii) 157.00° (iii) 158.00° (iv) 155.00° (v) 154.00°

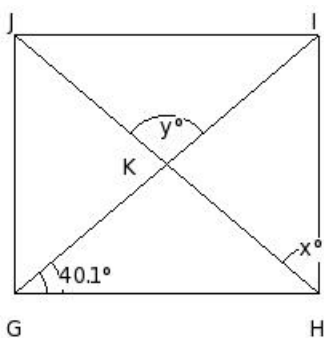
15. One angle of a parallelogram measures $M = 52.89^\circ$. Find the measure of each of its remaining angles.

- (i) $N = 129.11^\circ$, $O = 54.89^\circ$, $P = 129.11^\circ$
 (ii) $N = 126.11^\circ$, $O = 51.89^\circ$, $P = 126.11^\circ$
 (iii) $N = 127.11^\circ$, $O = 52.89^\circ$, $P = 127.11^\circ$
 (iv) $N = 125.11^\circ$, $O = 50.89^\circ$, $P = 125.11^\circ$
 (v) $N = 128.11^\circ$, $O = 53.89^\circ$, $P = 128.11^\circ$

16. Two adjacent angles of a parallelogram are in the ratio 3 : 9 . Find the measure of each of its angles.

- (i) $A = 46^\circ$, $B = 134^\circ$, $C = 47^\circ$, $D = 133^\circ$
 (ii) $A = 43^\circ$, $B = 137^\circ$, $C = 44^\circ$, $D = 136^\circ$
 (iii) $A = 47^\circ$, $B = 134^\circ$, $C = 43^\circ$, $D = 136^\circ$
 (iv) $A = 45^\circ$, $B = 135^\circ$, $C = 45^\circ$, $D = 135^\circ$
 (v) $A = 44^\circ$, $B = 133^\circ$, $C = 46^\circ$, $D = 137^\circ$

17. In the figure given below, GHIJ is a rectangle. Find the values of x and y

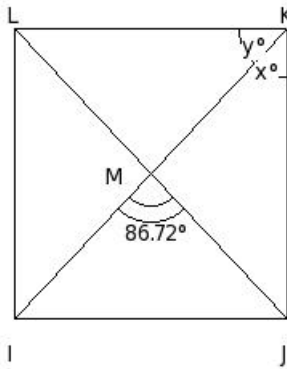


- (i) $x = 47.9^\circ$, $y = 97.8^\circ$
 (ii) $x = 50.9^\circ$, $y = 100.8^\circ$
 (iii) $x = 49.9^\circ$, $y = 99.8^\circ$

(iv) $x = 51.9^\circ$, $y = 101.8^\circ$

(v) $x = 48.9^\circ$, $y = 98.8^\circ$

18. In the figure given below, IJKL is a rectangle. Find the values of x and y



(i) $x = 44.36^\circ$, $y = 47.64^\circ$

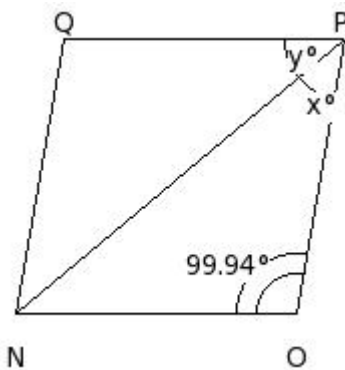
(ii) $x = 45.36^\circ$, $y = 48.64^\circ$

(iii) $x = 42.36^\circ$, $y = 45.64^\circ$

(iv) $x = 41.36^\circ$, $y = 44.64^\circ$

(v) $x = 43.36^\circ$, $y = 46.64^\circ$

19. In the figure given below, NOPQ is a rhombus. Find the values of x and y



(i) $x = 38.03^\circ$, $y = 38.03^\circ$

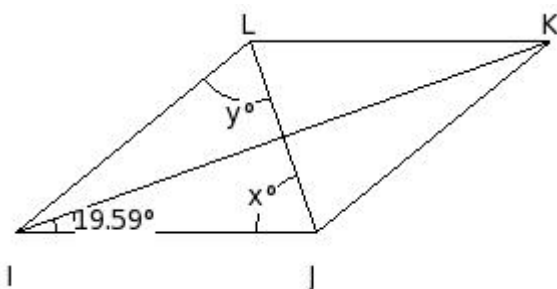
(ii) $x = 39.03^\circ$, $y = 39.03^\circ$

(iii) $x = 42.03^\circ$, $y = 42.03^\circ$

(iv) $x = 40.03^\circ$, $y = 40.03^\circ$

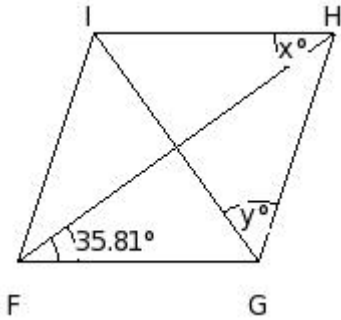
(v) $x = 41.03^\circ$, $y = 41.03^\circ$

20. In the figure given below, IJKL is a rhombus. Find the values of x and y



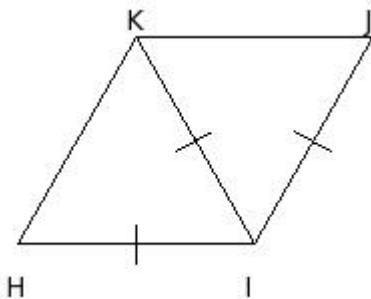
- (i) $x = 69.41^\circ$, $y = 69.41^\circ$
- (ii) $x = 70.41^\circ$, $y = 70.41^\circ$
- (iii) $x = 72.41^\circ$, $y = 72.41^\circ$
- (iv) $x = 68.41^\circ$, $y = 68.41^\circ$
- (v) $x = 71.41^\circ$, $y = 71.41^\circ$

21. In the figure given below, FGHI is a rhombus. Find the values of x and y



- (i) $x = 34.81^\circ$, $y = 53.19^\circ$
- (ii) $x = 35.81^\circ$, $y = 54.19^\circ$
- (iii) $x = 36.81^\circ$, $y = 55.19^\circ$
- (iv) $x = 33.81^\circ$, $y = 52.19^\circ$
- (v) $x = 37.81^\circ$, $y = 56.19^\circ$

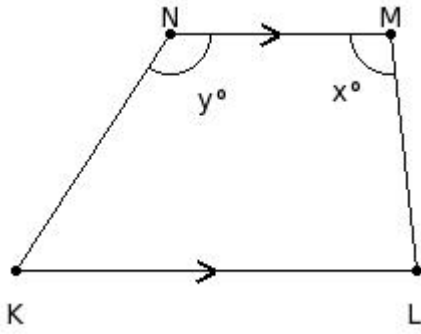
22. One of the diagonals of a rhombus is equal to one of its sides. Find the angles of the rhombus



- (i) $H = 62^\circ$, $I = 119^\circ$, $J = 58^\circ$, $K = 121^\circ$
- (ii) $H = 59^\circ$, $I = 118^\circ$, $J = 61^\circ$, $K = 122^\circ$
- (iii) $H = 58^\circ$, $I = 122^\circ$, $J = 59^\circ$, $K = 121^\circ$
- (iv) $H = 60^\circ$, $I = 120^\circ$, $J = 60^\circ$, $K = 120^\circ$
- (v) $H = 61^\circ$, $I = 119^\circ$, $J = 62^\circ$, $K = 118^\circ$

23. In the adjoining figure, KLMN is a trapezium in which $\overline{KL} \parallel \overline{MN}$.

If $x = 96.29^\circ$ and $y = 123.13^\circ$, find the measures of $\angle K$ and $\angle L$.

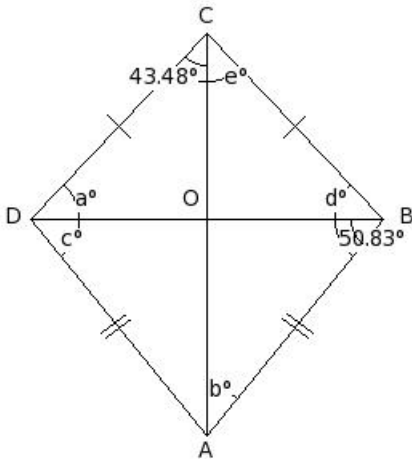


- (i) $K = 54.87^\circ$, $L = 81.71^\circ$
- (ii) $K = 57.87^\circ$, $L = 84.71^\circ$
- (iii) $K = 55.87^\circ$, $L = 82.71^\circ$
- (iv) $K = 58.87^\circ$, $L = 85.71^\circ$
- (v) $K = 56.87^\circ$, $L = 83.71^\circ$

In the adjoining figure, ABCD is a kite in which $AB = DA$, $BC = CD$

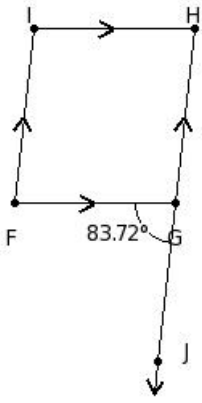
24. and the diagonals $\overline{BD}$ and $\overline{AC}$ intersect at O .

If $\angle OCD = 43.48^\circ$ and $\angle ABO = 50.83^\circ$, find the measure of each of the angles marked a,b,c,d and e.



- (i) $a = 46.52^\circ$, $b = 40.17^\circ$, $c = 49.83^\circ$, $d = 48.52^\circ$, $e = 41.48^\circ$
- (ii) $a = 46.52^\circ$, $b = 40.17^\circ$, $c = 49.83^\circ$, $d = 46.52^\circ$, $e = 43.48^\circ$
- (iii) $a = 46.52^\circ$, $b = 40.17^\circ$, $c = 50.83^\circ$, $d = 46.52^\circ$, $e = 43.48^\circ$
- (iv) $a = 46.52^\circ$, $b = 39.17^\circ$, $c = 50.83^\circ$, $d = 46.52^\circ$, $e = 43.48^\circ$
- (v) $a = 46.52^\circ$, $b = 40.17^\circ$, $c = 49.83^\circ$, $d = 48.52^\circ$, $e = 43.48^\circ$

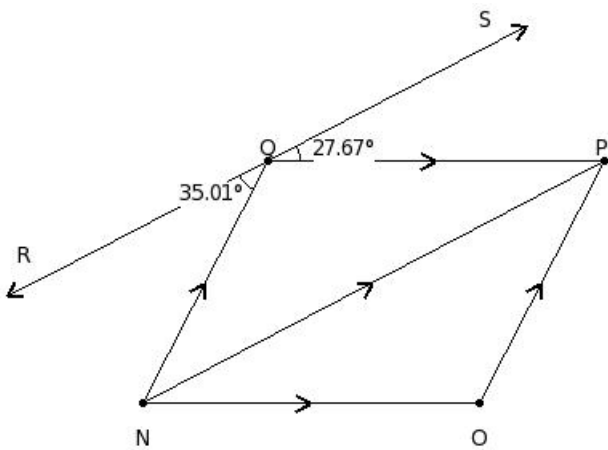
25. In the adjoining figure, side GH of parallelogram FGHI has been produced to J. If $\angle FGJ = 83.72^\circ$, find the measure of each angle of the parallelogram.



- (i) $F = 84.72^\circ$, $G = 95.28^\circ$, $H = 85.72^\circ$, $I = 94.28^\circ$
 (ii) $F = 85.72^\circ$, $G = 95.28^\circ$, $H = 81.72^\circ$, $I = 97.28^\circ$
 (iii) $F = 82.72^\circ$, $G = 94.28^\circ$, $H = 84.72^\circ$, $I = 98.28^\circ$
 (iv) $F = 83.72^\circ$, $G = 96.28^\circ$, $H = 83.72^\circ$, $I = 96.28^\circ$
 (v) $F = 81.72^\circ$, $G = 98.28^\circ$, $H = 82.72^\circ$, $I = 97.28^\circ$

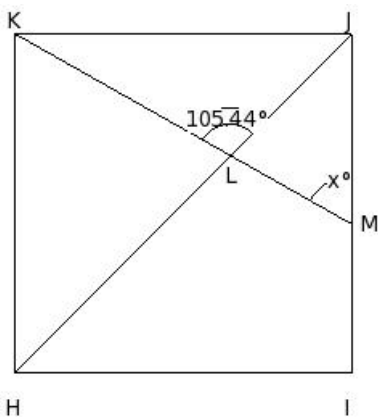
26. In the adjoining figure, NOPQ is a parallelogram and RS is such that $\overline{RS} \parallel \overline{NP}$

If $\angle NQR = 35.01^\circ$ and $\angle PQS = 27.67^\circ$, find the measure of $\angle PQN$.



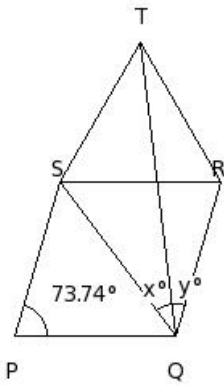
- (i) 116.32° (ii) 117.32° (iii) 119.32° (iv) 115.32° (v) 118.32°

27. In the adjoining figure, HIJK is a square. A line segment KM cuts the side IJ at M and the diagonal HJ at L such that $\angle KLJ = 105.44^\circ$ and $\angle LMJ = x^\circ$. Find the value of x .



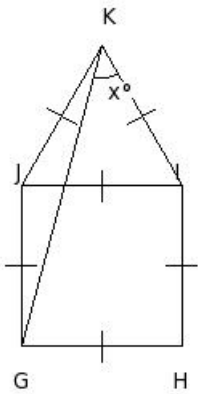
- (i) 60.44° (ii) 62.44° (iii) 61.44° (iv) 59.44° (v) 58.44°

28. In the adjoining figure, PQRS is a rhombus and $\triangle TSR$ is an equilateral triangle. T and Q are on opposite sides of RS. If $\angle SPQ = 73.74^\circ$, find the values of x and y .



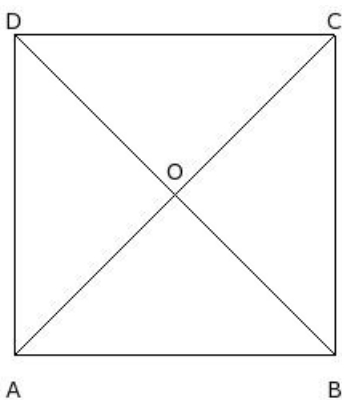
- (i) $x = 29^\circ$, $y = 22.13^\circ$
- (ii) $x = 28^\circ$, $y = 21.13^\circ$
- (iii) $x = 30^\circ$, $y = 23.13^\circ$
- (iv) $x = 32^\circ$, $y = 25.13^\circ$
- (v) $x = 31^\circ$, $y = 24.13^\circ$

29. In the adjoining figure, equilateral $\triangle JIK$ surmounts square GHIJ. If $\angle IKG = x^\circ$, find the value of x .



- (i) 45° (ii) 43° (iii) 47° (iv) 46° (v) 44°

30. In the adjoining figure, ABCD is a rhombus whose diagonals intersect at O. If $\angle OAB : \angle ABO = 3 : 3$, find the angles of $\triangle OAB$.

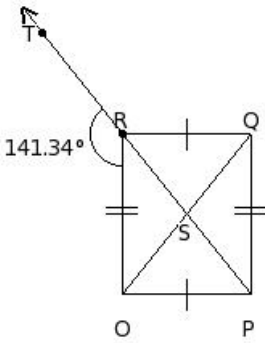


- (i) $O = 88^\circ$, $A = 47^\circ$, $B = 45^\circ$
- (ii) $O = 90^\circ$, $A = 43^\circ$, $B = 47^\circ$
- (iii) $O = 90^\circ$, $A = 45^\circ$, $B = 45^\circ$

(iv) $O = 92^\circ$, $A = 45^\circ$, $B = 43^\circ$

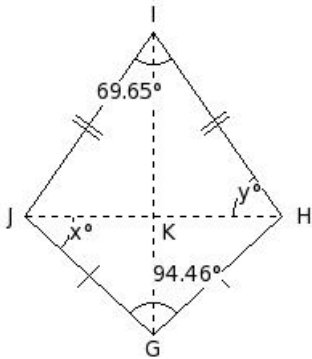
(v) $O = 88^\circ$, $A = 45^\circ$, $B = 47^\circ$

31. In the given figure, OPQR is a rectangle whose diagonals intersect at S .
 Diagonal PR is produced to T and $\angle ORT = 141.34^\circ$. Find the angles of $\triangle SPQ$.



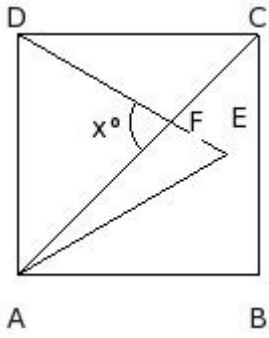
- (i) $S = 104.68^\circ$, $P = 38.66^\circ$, $Q = 36.66^\circ$
 (ii) $S = 102.68^\circ$, $P = 36.66^\circ$, $Q = 40.66^\circ$
 (iii) $S = 100.68^\circ$, $P = 38.66^\circ$, $Q = 40.66^\circ$
 (iv) $S = 100.68^\circ$, $P = 40.66^\circ$, $Q = 38.66^\circ$
 (v) $S = 102.68^\circ$, $P = 38.66^\circ$, $Q = 38.66^\circ$

32. In the given figure, GHIJ is a kite whose diagonals intersect at K .
 If $\angle JGH = 94.46^\circ$ and $\angle HIJ = 69.65^\circ$, calculate $\angle KJG$ and $\angle KHI$.



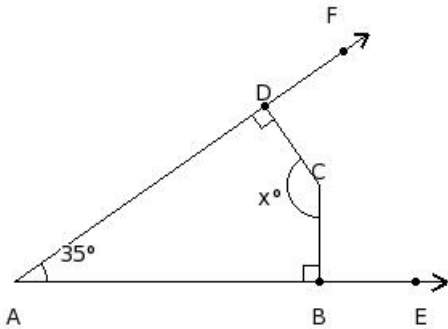
- (i) $x = 42.77^\circ$, $y = 55.17^\circ$
 (ii) $x = 44.77^\circ$, $y = 57.17^\circ$
 (iii) $x = 41.77^\circ$, $y = 54.17^\circ$
 (iv) $x = 40.77^\circ$, $y = 53.17^\circ$
 (v) $x = 43.77^\circ$, $y = 56.17^\circ$

33. $\triangle EDA$ is an equilateral triangle in a square ABCD .
 If AC and ED intersect at F , then find the value of x.



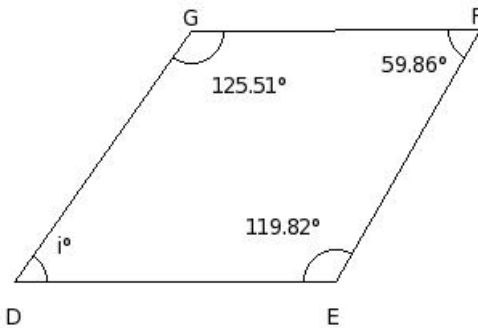
- (i) 74° (ii) 75° (iii) 73° (iv) 77° (v) 76°

34. In the adjoining figure, C is a point in the interior of $\angle EAF$.
If $CB \perp AE$ and $CD \perp AF$ and $\angle EAF = 35^\circ$, find the measure of x .



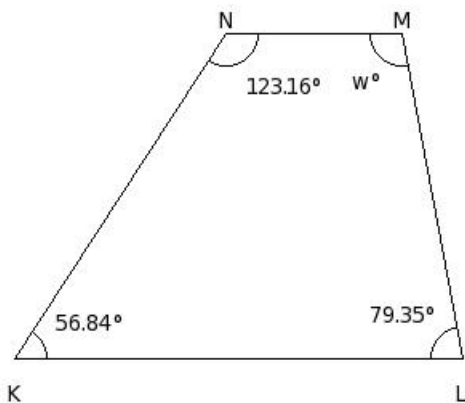
- (i) 145° (ii) 146° (iii) 144° (iv) 143° (v) 147°

35. Find the missing angle in the given quadrilateral



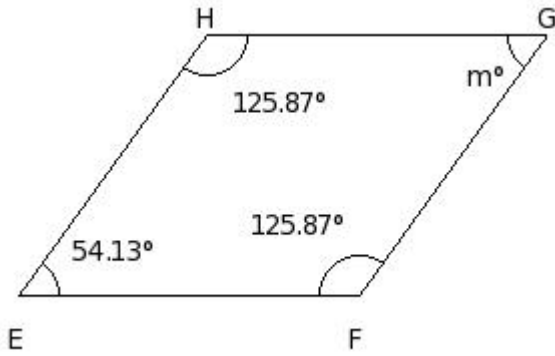
- (i) 64.81° (ii) 54.81° (iii) 69.81° (iv) 59.81° (v) 84.81°

36. Find the missing angle in the given trapezium



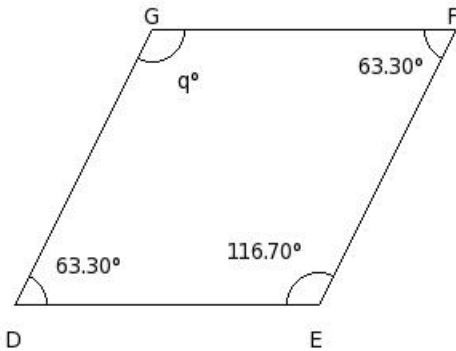
- (i) 110.65° (ii) 100.65° (iii) 105.65° (iv) 130.65° (v) 115.65°

37. Find the missing angle in the given parallelogram



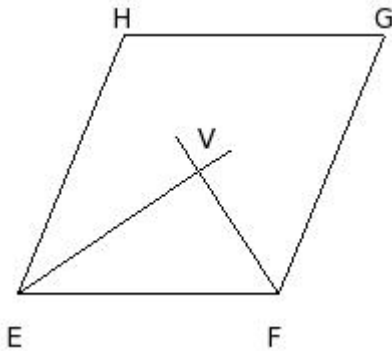
- (i) 59.13° (ii) 64.13° (iii) 54.13° (iv) 84.13° (v) 69.13°

38. Find the missing angle in the given rhombus



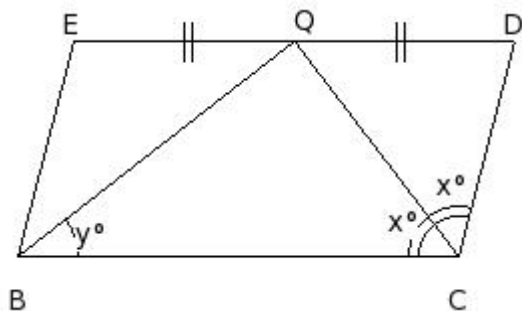
- (i) 126.7° (ii) 121.7° (iii) 131.7° (iv) 146.7° (v) 116.7°

39. In the given figure, EFGH is a parallelogram.
If EV and FV are bisector of $\angle E$ & $\angle F$, find $\angle V$



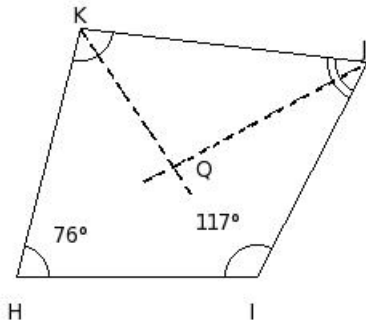
- (i) 89° (ii) 91° (iii) 92° (iv) 90° (v) 88°

40. In the given figure, BCDE is a parallelogram. Q is the mid-point of DE.
CQ bisects $\angle C$. If $x = 53^\circ$, find angle 'y'.



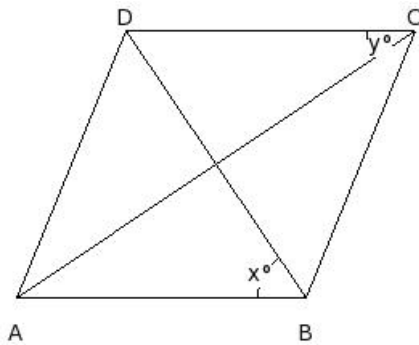
- (i) 37° (ii) 38° (iii) 36° (iv) 39° (v) 35°

41. In the given figure, HIJK is a quadrilateral. QK and QJ are bisectors of $\angle K$ & $\angle J$ meeting at Q. Find $\angle JQK$



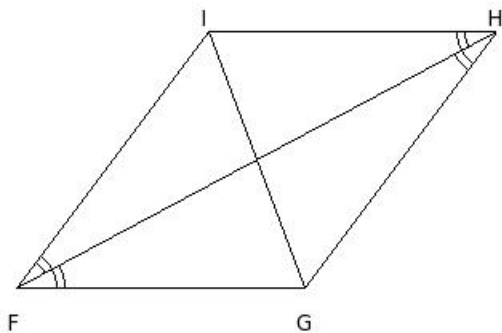
- (i) 95.5° (ii) 98.5° (iii) 96.5° (iv) 97.5° (v) 94.5°

42. In the given figure, ABCD is a rhombus. Given $x = 56^\circ$, find the value of 'y'.



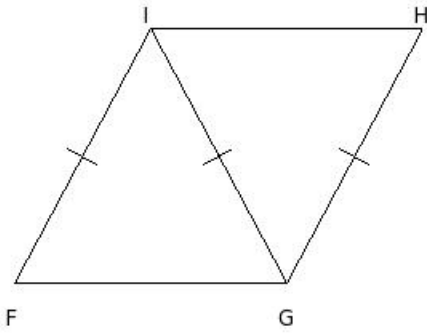
- (i) 36° (ii) 35° (iii) 34° (iv) 33° (v) 32°

43. In the given figure, FGHI is a parallelogram. FH bisects $\angle F$ & $\angle H$.
Given FH = 15 cm and GI = 10 cm, find FG



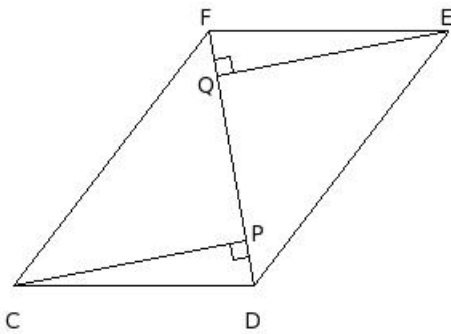
- (i) 9.01 cm (ii) 11.01 cm (iii) 8.01 cm (iv) 7.01 cm (v) 10.01 cm

44. In the given figure, FGHI is a parallelogram. GI is the diagonal such that $FI = GI = GH$. Given $\angle F = 62^\circ$, find $\angle IGH$



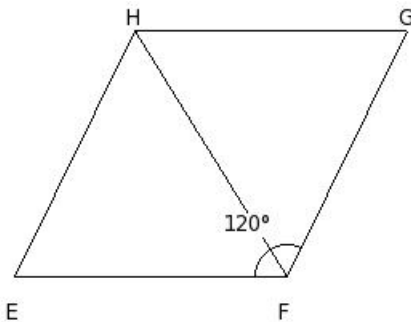
- (i) 56° (ii) 55° (iii) 58° (iv) 57° (v) 54°

45. In the given figure, CDEF is a parallelogram. CP and EQ are perpendicular to the diagonal DF. Given $\angle QEF = 11^\circ$, find $\angle FDC$



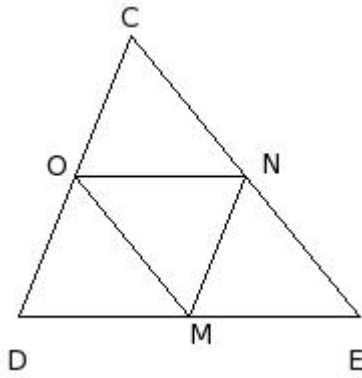
- (i) 78° (ii) 80° (iii) 79° (iv) 77° (v) 81°

46. In the given figure, EFGH is a rhombus such that $\angle F = 120^\circ$. Then $\triangle EFH$ is



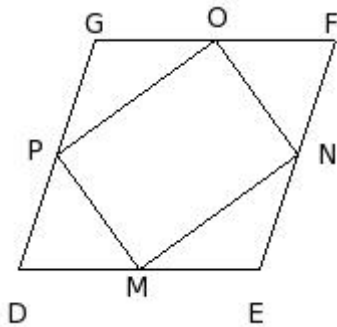
- (i) Right angled triangle
 (ii) Isosceles triangle
 (iii) Obtuse angled triangle
 (iv) Equilateral triangle

47. M, N, O are the mid-points of the sides of triangle CDE.
 If the perimeter of the $\triangle CDE$ is 50 cm, the perimeter of $\triangle MNO$ is



- (i) 23.0 cm (ii) 26.0 cm (iii) 24.0 cm (iv) 27.0 cm (v) 25.0 cm

48. DEFG is a rhombus. M, N, O and P are mid-points of sides DE, EF, FG and GD. Find $\angle NOP$

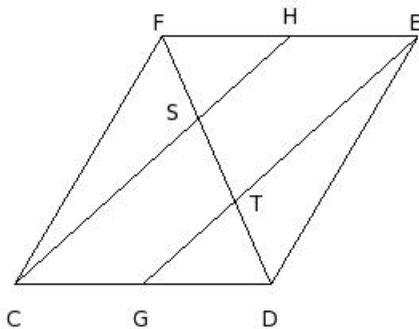


- (i) 91° (ii) 89° (iii) 92° (iv) 88° (v) 90°

In the given figure, CDEF is a parallelogram

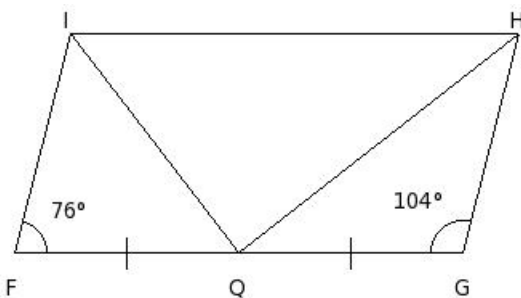
49. such that G and H are mid-points of sides CD & EF .

CH meets DF at S and EG meets DF at T . Given $DF = 17$ cm , find DT



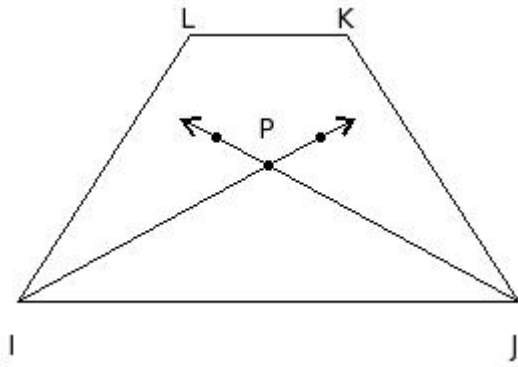
- (i) 3.67 cm (ii) 7.67 cm (iii) 6.67 cm (iv) 5.67 cm (v) 4.67 cm

50. In the given figure, FGHI is a parallelogram such that Q is the mid-point of FG and $FG = 2IF$. Find $\angle IQH$



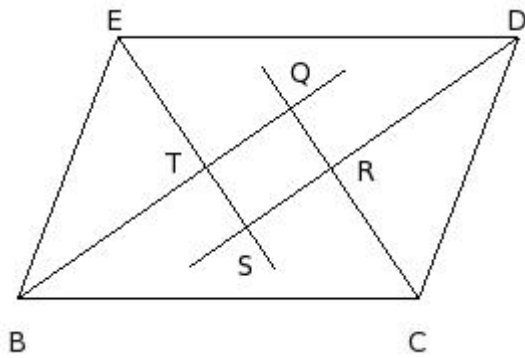
- (i) 89° (ii) 91° (iii) 92° (iv) 90° (v) 88°

51. IJKL is an isosceles trapezium. IP and JP are angular bisector of $\angle I$ & $\angle J$. If $\angle I = 57^\circ$, find $\angle IPJ$



- (i) 122° (ii) 123° (iii) 121° (iv) 124° (v) 125°

52. In the given figure, BCDE is a parallelogram. The bisector of the angles B, C, D & E intersect at Q, R, S & T to form a quadrilateral. Find $\angle QRS$



- (i) 90° (ii) 92° (iii) 89° (iv) 91° (v) 88°

Assignment Key

- 1) (i)
- 2) (iii)
- 3) (i)
- 4) (v)
- 5) (iii)
- 6) (i)
- 7) (iii)
- 8) (iii)
- 9) (i)
- 10) (iv)
- 11) (i)
- 12) (i)
- 13) (ii)
- 14) (i)
- 15) (iii)
- 16) (iv)
- 17) (iii)
- 18) (v)
- 19) (iv)
- 20) (ii)
- 21) (ii)
- 22) (iv)
- 23) (v)
- 24) (iv)
- 25) (iv)
- 26) (ii)
- 27) (i)
- 28) (iii)
- 29) (i)
- 30) (iii)
- 31) (v)
- 32) (i)
- 33) (ii)
- 34) (i)
- 35) (ii)
- 36) (ii)
- 37) (iii)
- 38) (v)
- 39) (iv)
- 40) (i)
- 41) (iii)
- 42) (iii)
- 43) (i)
- 44) (i)
- 45) (iii)
- 46) (iv)
- 47) (v)
- 48) (v)
- 49) (iv)
- 50) (iv)
- 51) (ii)
- 52) (i)