EduSahara™ Assignment

Name : Quadrilateral Angle Properties

Chapter : Quadrilaterals

Grade : ICSE Grade IX

1. In parallelogram ABCD, if ∠B = 152.2°, then find the value of ∠A

   (i) 28.80° (ii) 25.80° (iii) 26.80° (iv) 29.80° (v) 27.80°

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

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

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

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

4. The angles of a quadrilateral IJKL are in the ratio 5 : 4 : 3 : 8. Find the measure of each angle of the quadrilateral.

   (i) I=90°,J=72°,K=54°,L=144° (ii) I=88°,J=74°,K=53°,L=145° (iii) I=89°,J=70°,K=55°,L=146°

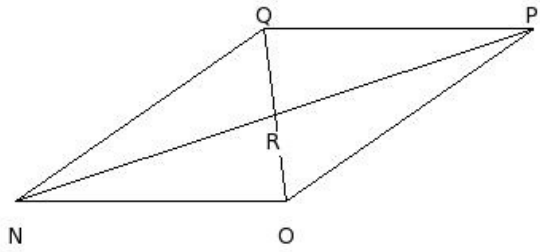
   (iv) I=92°,J=71°,K=52°,L=145° (v) I=91°,J=71°,K=56°,L=142°

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

   (i) E=91°,F=89°,G=92°,H=88° (ii) E=88°,F=92°,G=89°,H=91° (iii) E=92°,F=89°,G=88°,H=91°

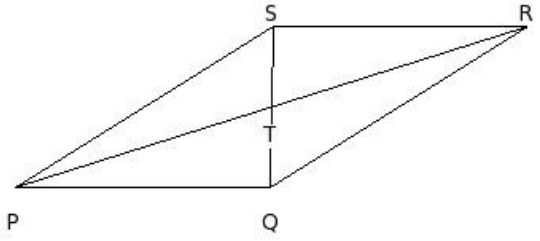
   (iv) E=90°,F=90°,G=90°,H=90° (v) E=89°,F=88°,G=91°,H=92°

6. In the adjoining figure, NOPQ is a parallelogram in which ∠QNP = 16.36°, ∠PNO = 18.33°, ∠QRP = 79.06°. Calculate ∠NOQ



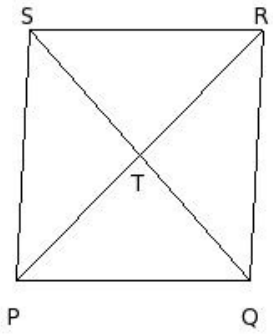
   (i) 80.61° (ii) 83.61° (iii) 84.61° (iv) 81.61° (v) 82.61°

7. In the adjoining figure, PQRS is a parallelogram in which ∠SPR = 14.69°, ∠RPQ = 17.25°, ∠STR = 71.3°. Calculate ∠RSQ



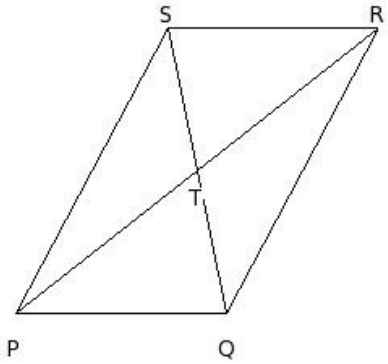
   (i) 89.45° (ii) 91.45° (iii) 93.45° (iv) 90.45° (v) 92.45°

8. In the adjoining figure, PQRS is a parallelogram in which $\angle SPR = 41.56°, \angle RPQ = 45.38°, \angle STR = 85.97°$. Calculate $\angle QRP$



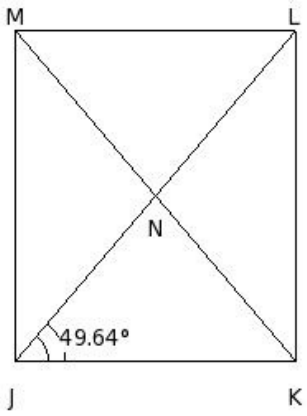
(i) 43.56° (ii) 39.56° (iii) 42.56° (iv) 41.56° (v) 40.56°

9. In the adjoining figure, PQRS is a parallelogram in which $\angle SPR = 23.74°, \angle RPQ = 38.16°, \angle STR = 63.4°$. Calculate $\angle SQR$



(i) 38.67° (ii) 37.67° (iii) 39.67° (iv) 40.67° (v) 41.67°

10. In the adjoining figure, JKLM is a rectangle. If $\angle LJK = 49.64°$, find $\angle LNK$



(i) 98.28° (ii) 97.28° (iii) 101.28° (iv) 99.28° (v) 100.28°

11. Three angles of quadrilateral measure 73.62°, 91.21° and 114.92° respectively. Find the measure of the fourth angle

(i) 80.25° (ii) 78.25° (iii) 81.25° (iv) 79.25° (v) 82.25°

12. Three angles of a quadrilateral are equal and the fourth angle measure 38.05°. What is the measure of each of the equal angles?

(i) 106.32° (ii) 105.32° (iii) 109.32° (iv) 107.32° (v) 108.32°

13. Two angles of a quadrilateral are of measure 64.97° and 141.84° respectively and the other two angles are equal. Find the measure of each of the equal angles.

(i) 77.59° (ii) 76.59° (iii) 78.59° (iv) 74.59° (v) 75.59°

14. A quadrilateral has three acute angles, each measuring 43°. What is the measure of its fourth angle?

(i) 233.00° (ii) 231.00° (iii) 232.00° (iv) 229.00° (v) 230.00°

15. One angle of a parallelogram measures $B = 61.28°$.
Find the measure of each of its remaining angles.

(i) $C = 116.72°, D = 59.28°, E = 116.72°$ (ii) $C = 119.72°, D = 62.28°, E = 119.72°$

(iii) $C = 117.72°, D = 60.28°, E = 117.72°$ (iv) $C = 118.72°, D = 61.28°, E = 118.72°$

(v) $C = 120.72°, D = 63.28°, E = 120.72°$

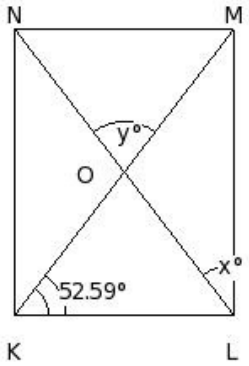
16. Two adjacent angles of a parallelogram are in the ratio $36 : 54$.
Find the measure of each of its angles.

(i) $A = 73°, B = 107°, C = 74°, D = 106°$ (ii) $A = 70°, B = 110°, C = 71°, D = 109°$

(iii) $A = 72°, B = 108°, C = 72°, D = 108°$ (iv) $A = 71°, B = 106°, C = 73°, D = 110°$

(v) $A = 74°, B = 107°, C = 70°, D = 109°$

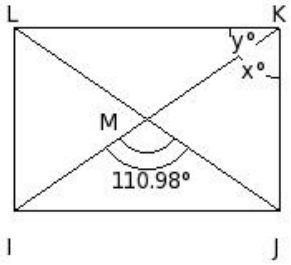
17. In the figure given below, KLMN is a rectangle. Find the values of x and y



(i) $x = 36.41°, y = 73.82°$ (ii) $x = 38.41°, y = 75.82°$ (iii) $x = 35.41°, y = 72.82°$ (iv) $x = 37.41°, y = 74.82°$

(v) $x = 39.41°, y = 76.82°$

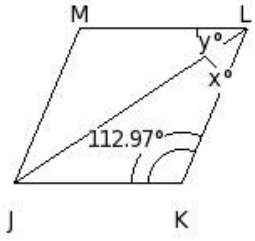
18. In the figure given below, IJKL is a rectangle. Find the values of x and y



(i) $x = 53.49°, y = 32.51°$ (ii) $x = 56.49°, y = 35.51°$ (iii) $x = 55.49°, y = 34.51°$ (iv) $x = 54.49°, y = 33.51°$

(v) $x = 57.49°, y = 36.51°$

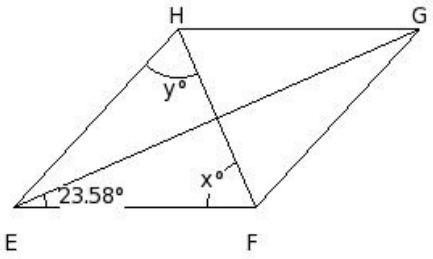
19. In the figure given below, JKLM is a rhombus. Find the values of x and y



(i) $x = 31.52°, y = 31.52°$ (ii) $x = 35.52°, y = 35.52°$ (iii) $x = 33.52°, y = 33.52°$ (iv) $x = 34.52°, y = 34.52°$

(v) $x = 32.52°, y = 32.52°$

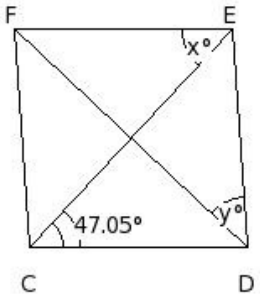
20. In the figure given below, EFGH is a rhombus. Find the values of x and y



(i) x=68.42°,y=68.42° (ii) x=66.42°,y=66.42° (iii) x=64.42°,y=64.42° (iv) x=67.42°,y=67.42°

(v) x=65.42°,y=65.42°

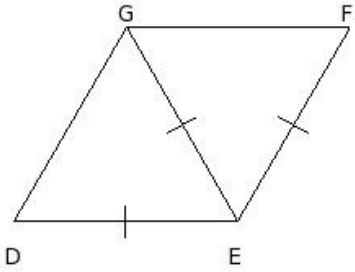
21. In the figure given below, CDEF is a rhombus. Find the values of x and y



(i) x=48.05°,y=43.95° (ii) x=47.05°,y=42.95° (iii) x=45.05°,y=40.95° (iv) x=46.05°,y=41.95°

(v) x=49.05°,y=44.95°

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

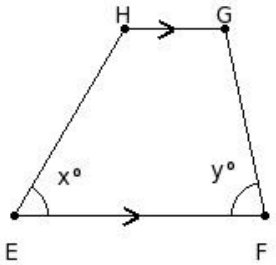


(i) D=58°,E=122°,F=59°,G=121° (ii) D=62°,E=119°,F=58°,G=121°

(iii) D=59°,E=118°,F=61°,G=122° (iv) D=60°,E=120°,F=60°,G=120°

(v) D=61°,E=119°,F=62°,G=118°

23. In the adjoining figure, EFGH is a trapezium in which $\overline{EF} \parallel \overline{GH}$.
If x = 59.49° and y = 77.91°, find the measures of ∠G and ∠H.

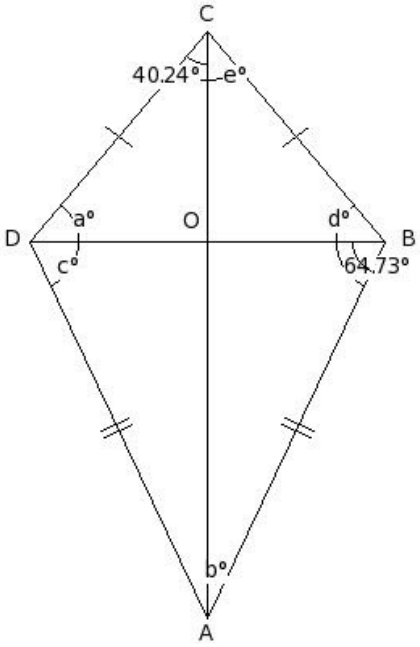


(i) G=103.09°,H=121.51° (ii) G=100.09°,H=118.51° (iii) G=101.09°,H=119.51°

(iv) G=102.09°,H=120.51° (v) G=104.09°,H=122.51°

24. In the adjoining figure, $ABCD$ is a kite in which $AB = DA, BC = CD$ and the diagonals $\overline{BD}$ and $\overline{AC}$ intersect at O.

If $\angle OCD = 40.24°$ and $\angle ABO = 64.73°$, find the measure of each of the angles marked a,b,c,d and e.



(i) a = 49.76° , b = 26.27° , c = 63.73° , d = 49.76° , e = 40.24°

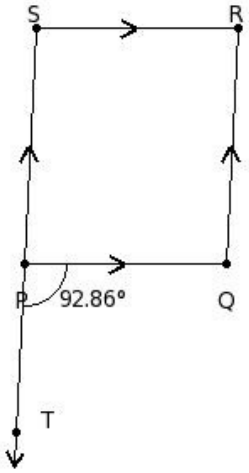
(ii) a = 49.76° , b = 26.27° , c = 63.73° , d = 51.76° , e = 40.24°

(iii) a = 49.76° , b = 25.27° , c = 64.73° , d = 49.76° , e = 40.24°

(iv) a = 49.76° , b = 26.27° , c = 64.73° , d = 49.76° , e = 40.24°

(v) a = 49.76° , b = 26.27° , c = 63.73° , d = 51.76° , e = 38.24°

25. In the adjoining figure, side SP of parallelogram PQRS has been produced to T. If $\angle QPT = 92.86°$, find the measure of each angle of the parallelogram.

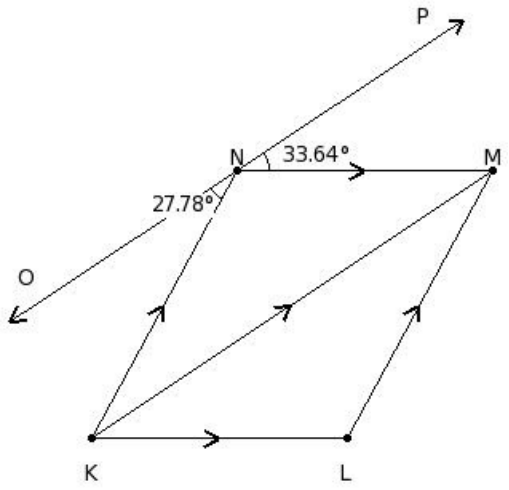


(i) P=86.14°,Q=90.86°,R=88.14°,S=94.86° (ii) P=88.14°,Q=91.86°,R=89.14°,S=90.86°

(iii) P=89.14°,Q=91.86°,R=85.14°,S=93.86° (iv) P=87.14°,Q=92.86°,R=87.14°,S=92.86°

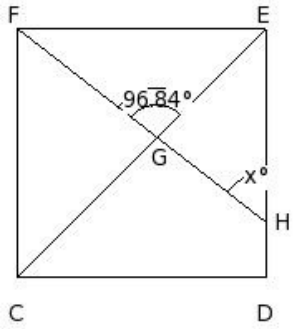
(v) P=85.14°,Q=94.86°,R=86.14°,S=93.86°

26. In the adjoining figure, KLMN is a parallelogram and OP is such that $\overline{OP} \parallel \overline{KM}$
If $\angle KNO = 27.78°$ and $\angle MNP = 33.64°$, find the measure of $\angle KLM$.



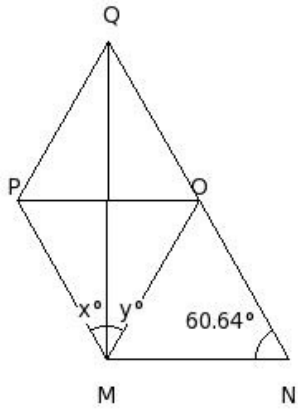
(i) 117.59° (ii) 120.59° (iii) 118.59° (iv) 119.59° (v) 116.59°

27. In the adjoining figure, CDEF is a square. A line segment FH cuts the side DE at H and the diagonal CE at G such that $\angle FGE = 96.84°$ and $\angle GHE = x°$. Find the value of x .



(i) 53.84° (ii) 52.84° (iii) 49.84° (iv) 51.84° (v) 50.84°

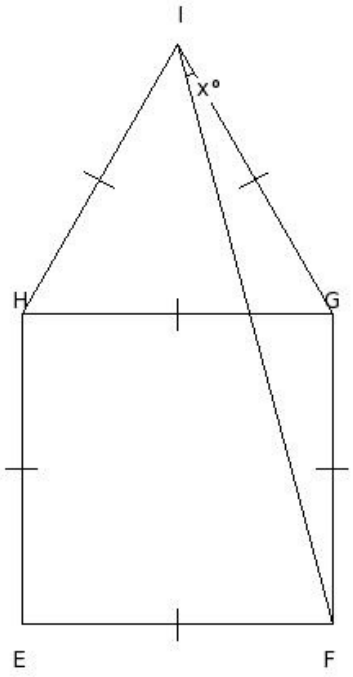
28. In the adjoining figure, MNOP is a rhombus and $\triangle QPO$ is an equilateral triangle. Q and M are on opposite sides of OP. If $\angle MNO = 60.64°$, find the values of x and y .



(i) $x=31.68°, y=32°$ (ii) $x=29.68°, y=30°$ (iii) $x=28.68°, y=29°$ (iv) $x=30.68°, y=31°$

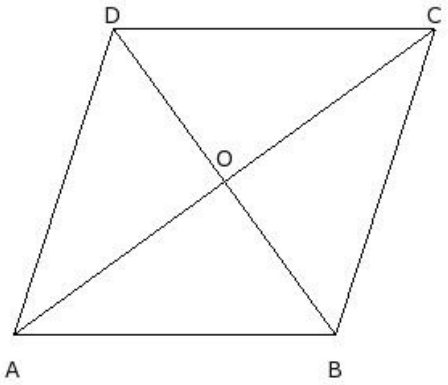
(v) $x=27.68°, y=28°$

29. In the adjoining figure, equilateral △HGI surmounts square EFGH. If GIF = x°, find the value of x.



(i) 16° (ii) 13° (iii) 14° (iv) 15° (v) 17°

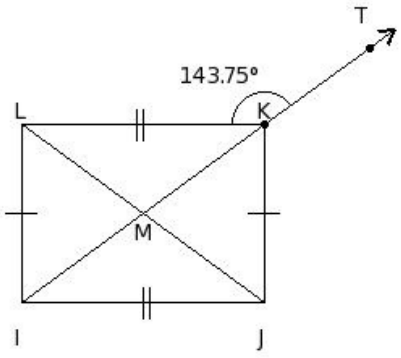
30. In the adjoining figure, ABCD is a rhombus whose diagonals intersect at O.
If ∠OAB : ∠ABO = 2 : 3, find the angles of △OAB.



(i) O = 90°, A = 34°, B = 56° (ii) O = 90°, A = 36°, B = 54° (iii) O = 88°, A = 36°, B = 56° (iv) O = 88°, A = 38°, B = 54°

(v) O = 92°, A = 36°, B = 52°

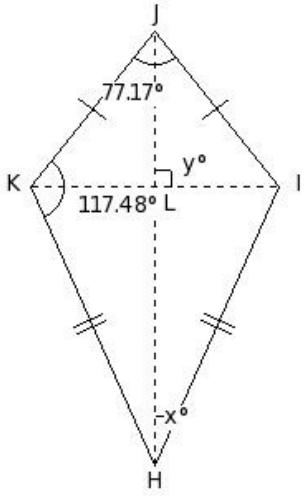
31. In the given figure, IJKL is a rectangle whose diagonals intersect at M.
Diagonal IK is produced to T and ∠LKT = 143.75°. Find the angles of △MLI.



(i) M = 70.5°, L = 53.75°, I = 55.75° (ii) M = 70.5°, L = 55.75°, I = 53.75° (iii) M = 74.5°, L = 53.75°, I = 51.75°

(iv) M = 72.5°, L = 51.75°, I = 55.75° (v) M = 72.5°, L = 53.75°, I = 53.75°

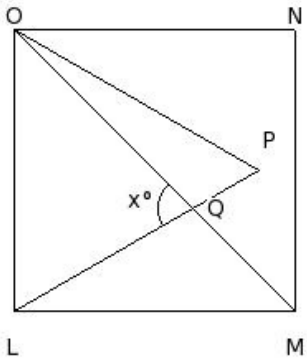
32. In the given figure, HIJK is a kite whose diagonals intersect at L.
If ∠IJK = 77.17° and ∠JKH = 117.48°, calculate ∠LHI and ∠JLI.



(i) x=22.94°,y=89° (ii) x=21.94°,y=88° (iii) x=23.94°,y=90° (iv) x=25.94°,y=92°

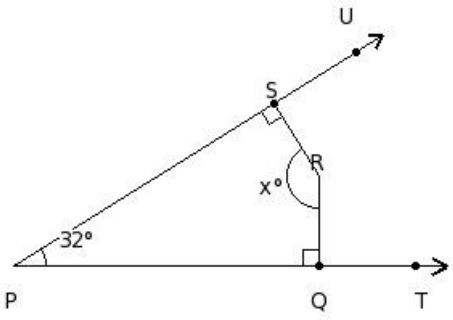
(v) x=24.94°,y=91°

33. △POL is an equilateral triangle in a square LMNO.
If MO and LP intersect at Q, then find the value of x.



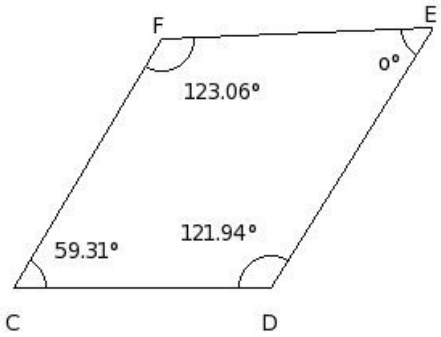
(i) 73° (ii) 76° (iii) 74° (iv) 75° (v) 77°

34. In the adjoining figure, R is a point in the interior of ∠TPU.
If RQ⊥PT and RS⊥PU and ∠TPU = 32°, find the measure of x .



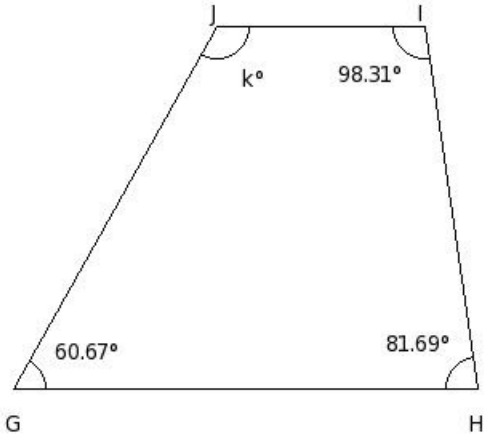
(i) 150° (ii) 146° (iii) 148° (iv) 147° (v) 149°

35. Find the missing angle in the given quadrilateral



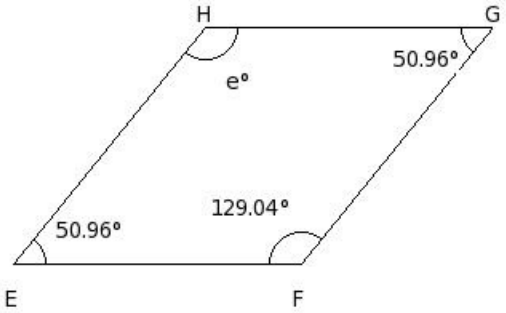
(i) 65.69° (ii) 55.69° (iii) 85.69° (iv) 70.69° (v) 60.69°

36. Find the missing angle in the given trapezium



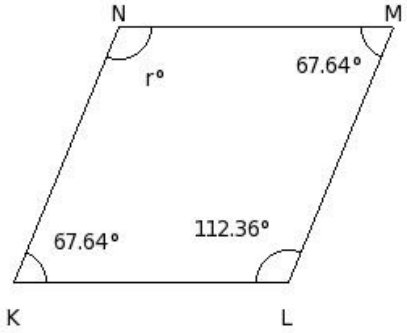
(i) 124.33° (ii) 119.33° (iii) 134.33° (iv) 129.33° (v) 149.33°

37. Find the missing angle in the given parallelogram



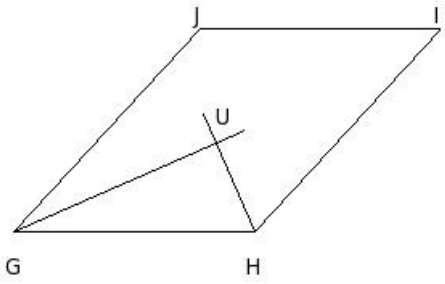
(i) 134.04° (ii) 129.04° (iii) 159.04° (iv) 144.04° (v) 139.04°

38. Find the missing angle in the given rhombus



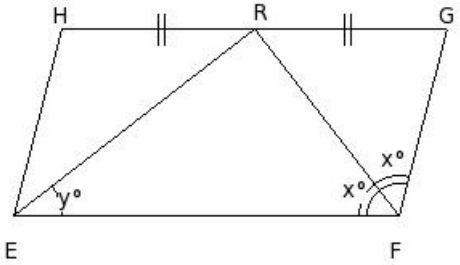
(i) 117.36° (ii) 122.36° (iii) 112.36° (iv) 142.36° (v) 127.36°

39. In the given figure, GHIJ is a parallelogram.
If GU and HU are bisector of ∠G & ∠H, find ∠U



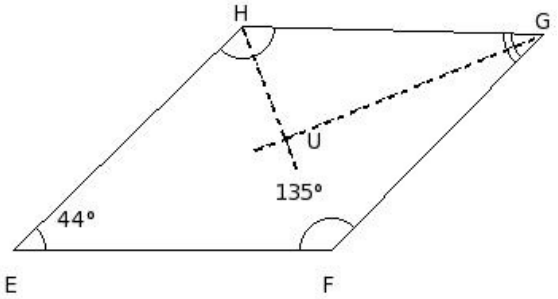
(i) 88° (ii) 92° (iii) 91° (iv) 90° (v) 89°

40. In the given figure, EFGH is a parallelogram. R is the mid-point of GH.
FR bisects ∠F. If x = 52°, find angle 'y'.



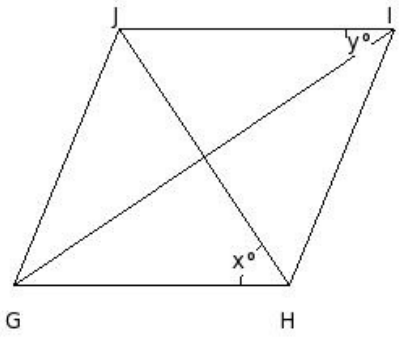
(i) 37° (ii) 39° (iii) 40° (iv) 36° (v) 38°

41. In the given figure, EFGH is a quadrilateral. UH and UG are bisectors of ∠H & ∠G meeting at U. Find ∠GUH



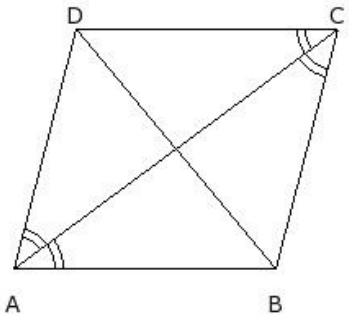
(i) 90.5° (ii) 91.5° (iii) 87.5° (iv) 89.5° (v) 88.5°

42. In the given figure, GHIJ is a rhombus. Given x = 56°, find the value of 'y'.



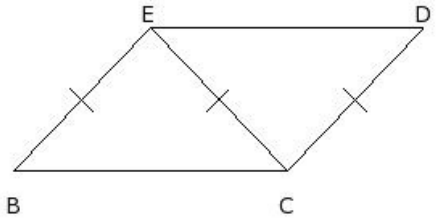
(i) 35° (ii) 36° (iii) 33° (iv) 32° (v) 34°

43. In the given figure, ABCD is a parallelogram. AC bisects ∠A & ∠C.
Given AC = 12 cm and BD = 8 cm, find AB



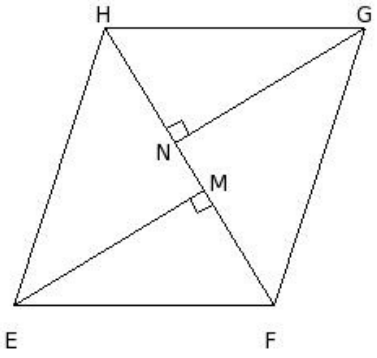
(i) 7.21 cm (ii) 6.21 cm (iii) 5.21 cm (iv) 9.21 cm (v) 8.21 cm

44. In the given figure, BCDE is a parallelogram. CE is the diagonal such that BE = CE = CD. Given ∠B = 46°, find ∠ECD



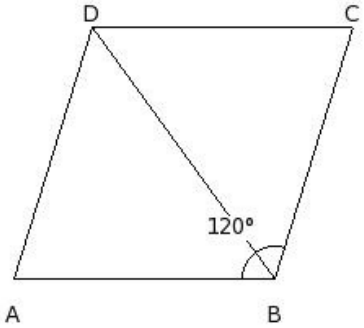
(i) 86° (ii) 88° (iii) 89° (iv) 90° (v) 87°

45. In the given figure, EFGH is a parallelogram. EM and GN are perpendicular to the diagonal FH. Given ∠NGH = 31°, find ∠HFE



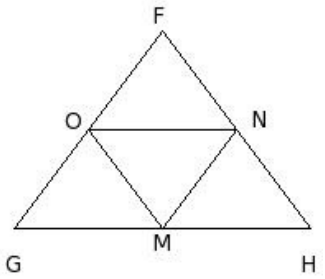
(i) 61° (ii) 59° (iii) 60° (iv) 58° (v) 57°

46. In the given figure, ABCD is a rhombus such that ∠B = 120°. Then △ABD is



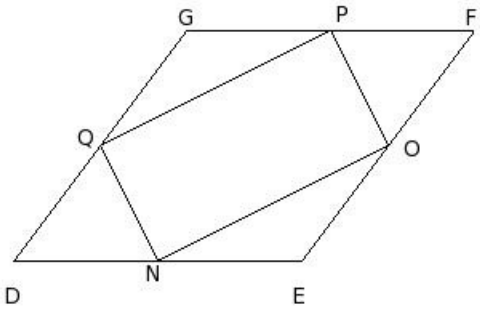
(i) Isosceles triangle (ii) Right angled triangle (iii) Equilateral triangle (iv) Obtuse angled triangle

47. M, N, O are the mid-points of the sides of triangle FGH.
If the perimeter of the $\triangle FGH$ is 48 cm, the perimeter of $\triangle MNO$ is



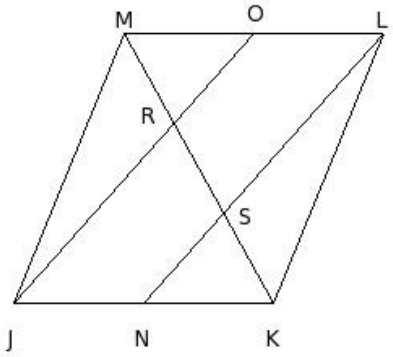
(i) 25.0 cm (ii) 22.0 cm (iii) 23.0 cm (iv) 26.0 cm (v) 24.0 cm

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



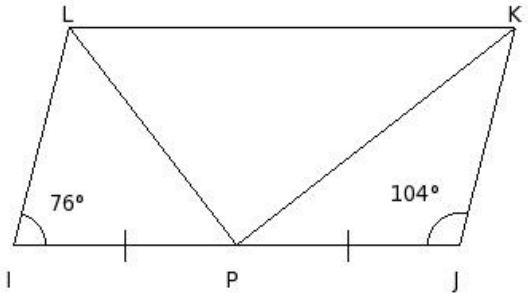
(i) 90° (ii) 91° (iii) 92° (iv) 88° (v) 89°

In the given figure, JKLM is a parallelogram
49. such that N and O are mid-points of sides JK & LM.
JO meets KM at R and LN meets KM at S. Given KM = 19 cm, find RM



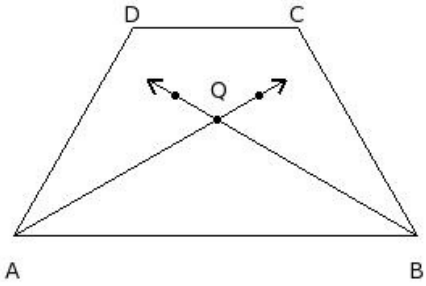
(i) 5.33 cm (ii) 6.33 cm (iii) 4.33 cm (iv) 7.33 cm (v) 8.33 cm

50. In the given figure, IJKL is a parallelogram such that P is the mid-point of IJ and IJ = 2LI. Find $\angle LPK$



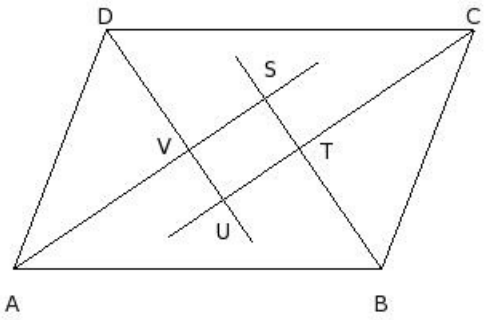
(i) 88° (ii) 89° (iii) 91° (iv) 90° (v) 92°

51. ABCD is an isosceles trapezium. AQ and BQ are angular bisector of ∠A & ∠B. If ∠A = 60°, find ∠AQB



(i) 121° (ii) 118° (iii) 120° (iv) 119° (v) 122°

52. In the given figure, ABCD is a parallelogram. The bisector of the angles A, B, C & D intersect at S, T, U & V to form a quadrilateral. Find ∠VST



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

Assignment Key

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