EduSahara™ Assignment

Name : Quadrilateral Angle Properties

Chapter : Quadrilaterals

Grade : ICSE Grade IX

1. In parallelogram ABCD, if ∠C = 54.9°, then find the value of ∠A

   (i) 52.90° (ii) 55.90° (iii) 53.90° (iv) 56.90° (v) 54.90°

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

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

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

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

4. The angles of a quadrilateral IJKL are in the ratio 15 : 22 : 21 : 62. Find the measure of each angle of the quadrilateral.

   (i) I=45°,J=66°,K=63°,L=186° (ii) I=47°,J=65°,K=61°,L=187° (iii) I=44°,J=64°,K=64°,L=188°

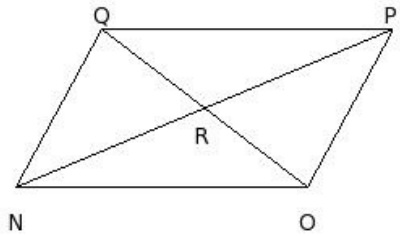
   (iv) I=46°,J=65°,K=65°,L=184° (v) I=43°,J=68°,K=62°,L=187°

5. Two adjacent angles of a parallelogram DEFG are in the ratio 8 : 22. Find the measure of each of its angles.

   (i) D=48°,E=132°,F=48°,G=132° (ii) D=49°,E=131°,F=50°,G=130° (iii) D=47°,E=130°,F=49°,G=134°

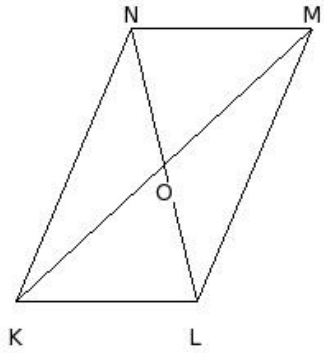
   (iv) D=50°,E=131°,F=46°,G=133° (v) D=46°,E=134°,F=47°,G=133°

6. In the adjoining figure, NOPQ is a parallelogram in which ∠QNP = 38.87°, ∠PNO = 22.48°, ∠QRP = 119.4°. Calculate ∠NOQ



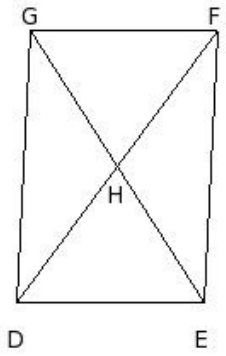
   (i) 36.12° (ii) 40.12° (iii) 38.12° (iv) 37.12° (v) 39.12°

7. In the adjoining figure, KLMN is a parallelogram in which ∠NKM = 24.45°, ∠MKL = 42.68°, ∠NOM = 60.87°. Calculate ∠MNL



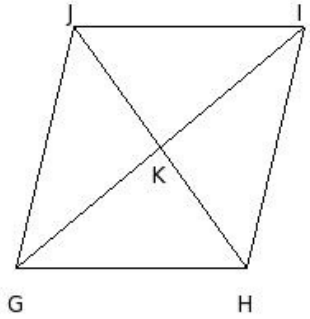
   (i) 78.45° (ii) 77.45° (iii) 74.45° (iv) 75.45° (v) 76.45°

8. In the adjoining figure, DEFG is a parallelogram in which $\angle GDF = 33.55°, \angle FDE = 53.59°, \angle GHF = 68.93°$. Calculate $\angle EFD$



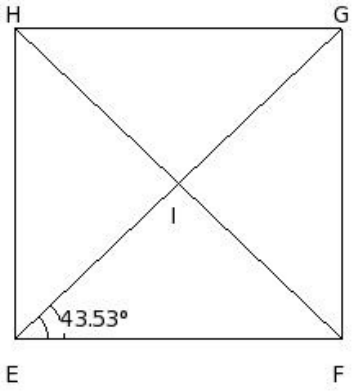
(i) 35.55° (ii) 31.55° (iii) 33.55° (iv) 32.55° (v) 34.55°

9. In the adjoining figure, GHIJ is a parallelogram in which $\angle JGI = 36.52°, \angle IGH = 40°, \angle JKI = 85.78°$. Calculate $\angle JHI$



(i) 50.26° (ii) 51.26° (iii) 48.26° (iv) 47.26° (v) 49.26°

10. In the adjoining figure, EFGH is a rectangle. If $\angle GEF = 43.53°$, find $\angle GIF$



(i) 87.06° (ii) 89.06° (iii) 88.06° (iv) 85.06° (v) 86.06°

11. Three angles of quadrilateral measure 94.54°, 131.41° and 36.87° respectively. Find the measure of the fourth angle

(i) 97.18° (ii) 99.18° (iii) 95.18° (iv) 98.18° (v) 96.18°

12. Three angles of a quadrilateral are equal and the fourth angle measure 48.74°. What is the measure of each of the equal angles?

(i) 102.75° (ii) 105.75° (iii) 104.75° (iv) 103.75° (v) 101.75°

13. Two angles of a quadrilateral are of measure 78.47° and 59.69° respectively and the other two angles are equal. Find the measure of each of the equal angles.

(i) 108.92° (ii) 111.92° (iii) 109.92° (iv) 112.92° (v) 110.92°

14. A quadrilateral has three acute angles, each measuring 51°. What is the measure of its fourth angle?

(i) 206.00° (ii) 207.00° (iii) 208.00° (iv) 209.00° (v) 205.00°

15. One angle of a parallelogram measures $M = 73.69°$.
Find the measure of each of its remaining angles.

(i) $N = 104.31°, O = 71.69°, P = 104.31°$ (ii) $N = 106.31°, O = 73.69°, P = 106.31°$

(iii) $N = 107.31°, O = 74.69°, P = 107.31°$ (iv) $N = 108.31°, O = 75.69°, P = 108.31°$

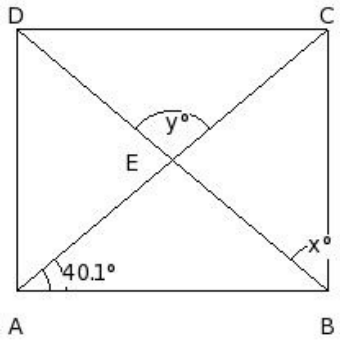
(v) $N = 105.31°, O = 72.69°, P = 105.31°$

16. Two adjacent angles of a parallelogram are in the ratio $2 : 2$.
Find the measure of each of its angles.

(i) $A = 91°, B = 89°, C = 92°, D = 88°$ (ii) $A = 90°, B = 90°, C = 90°, D = 90°$ (iii) $A = 88°, B = 92°, C = 89°, D = 91°$

(iv) $A = 89°, B = 88°, C = 91°, D = 92°$ (v) $A = 92°, B = 89°, C = 88°, D = 91°$

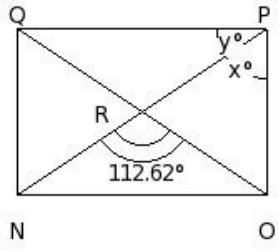
17. In the figure given below, $ABCD$ is a rectangle. Find the values of x and y



(i) $x = 49.9°, y = 99.8°$ (ii) $x = 48.9°, y = 98.8°$ (iii) $x = 51.9°, y = 101.8°$ (iv) $x = 50.9°, y = 100.8°$

(v) $x = 47.9°, y = 97.8°$

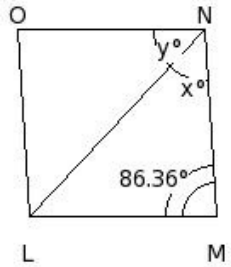
18. In the figure given below, $NOPQ$ is a rectangle. Find the values of x and y



(i) $x = 56.31°, y = 33.69°$ (ii) $x = 55.31°, y = 32.69°$ (iii) $x = 58.31°, y = 35.69°$ (iv) $x = 57.31°, y = 34.69°$

(v) $x = 54.31°, y = 31.69°$

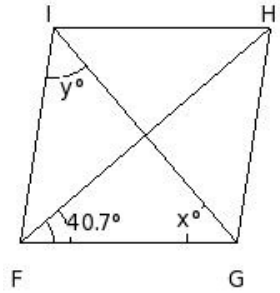
19. In the figure given below, $LMNO$ is a rhombus. Find the values of x and y



(i) $x = 45.82°, y = 45.82°$ (ii) $x = 47.82°, y = 47.82°$ (iii) $x = 48.82°, y = 48.82°$ (iv) $x = 44.82°, y = 44.82°$

(v) $x = 46.82°, y = 46.82°$

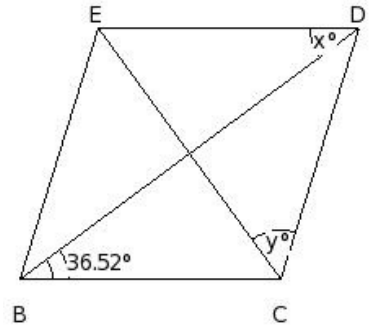
20. In the figure given below, FGHI is a rhombus. Find the values of x and y



(i) x=50.3°,y=50.3° (ii) x=48.3°,y=48.3° (iii) x=51.3°,y=51.3° (iv) x=47.3°,y=47.3°

(v) x=49.3°,y=49.3°

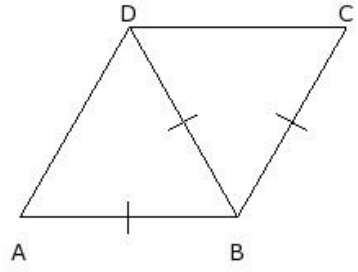
21. In the figure given below, BCDE is a rhombus. Find the values of x and y



(i) x=38.52°,y=55.48° (ii) x=35.52°,y=52.48° (iii) x=34.52°,y=51.48° (iv) x=36.52°,y=53.48°

(v) x=37.52°,y=54.48°

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

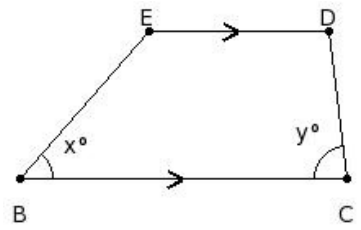


(i) A=62°,B=119°,C=58°,D=121° (ii) A=59°,B=118°,C=61°,D=122°

(iii) A=58°,B=122°,C=59°,D=121° (iv) A=60°,B=120°,C=60°,D=120°

(v) A=61°,B=119°,C=62°,D=118°

23. In the adjoining figure, BCDE is a trapezium in which $\overline{BC} \parallel \overline{DE}$.
If x = 48.72° and y = 83.03°, find the measures of ∠D and ∠E.

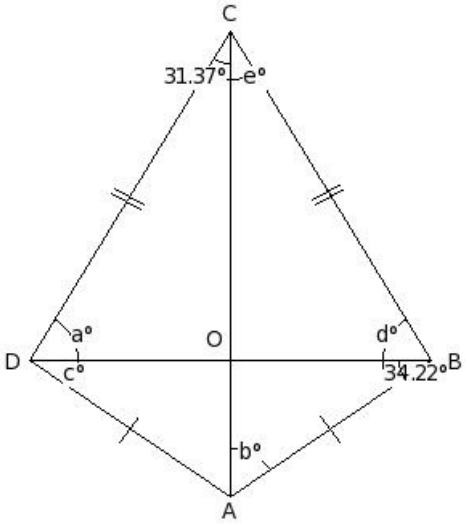


(i) D=98.97°,E=133.28° (ii) D=94.97°,E=129.28° (iii) D=95.97°,E=130.28° (iv) D=97.97°,E=132.28°

(v) D=96.97°,E=131.28°

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 $\angle OCD = 31.37°$ and $\angle ABO = 34.22°$, find the measure of each of the angles marked a,b,c,d and e.



(i) a = 58.63° , b = 56.78° , c = 33.22° , d = 60.63° , e = 29.37°

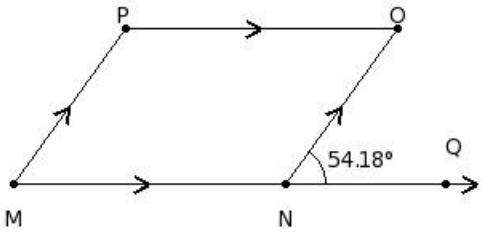
(ii) a = 58.63° , b = 56.78° , c = 34.22° , d = 58.63° , e = 31.37°

(iii) a = 58.63° , b = 56.78° , c = 33.22° , d = 58.63° , e = 31.37°

(iv) a = 58.63° , b = 56.78° , c = 33.22° , d = 60.63° , e = 31.37°

(v) a = 58.63° , b = 55.78° , c = 34.22° , d = 58.63° , e = 31.37°

25. In the adjoining figure, side MN of parallelogram MNOP has been produced to Q. If $\angle ONQ = 54.18°$, find the measure of each angle of the parallelogram.

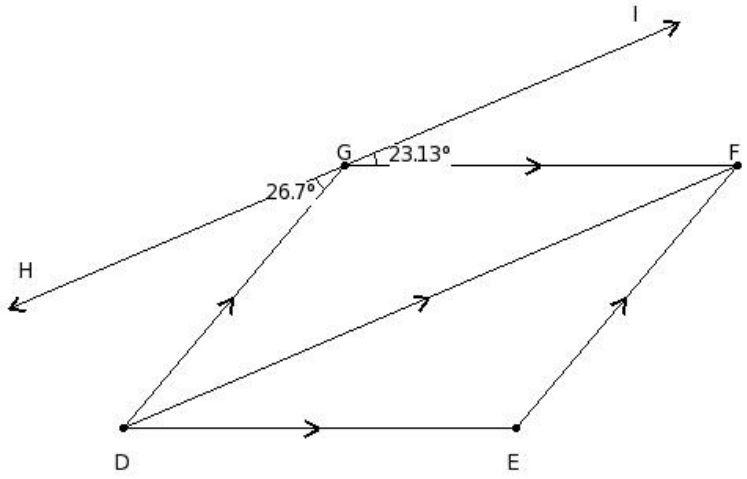


(i) M=56.18°,N=124.82°,O=52.18°,P=126.82° (ii) M=55.18°,N=124.82°,O=56.18°,P=123.82°

(iii) M=54.18°,N=125.82°,O=54.18°,P=125.82° (iv) M=53.18°,N=123.82°,O=55.18°,P=127.82°

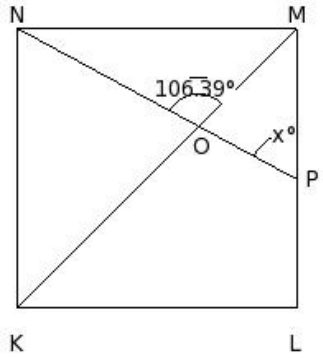
(v) M=52.18°,N=127.82°,O=53.18°,P=126.82°

26. In the adjoining figure, DEFG is a parallelogram and HI is such that $\overline{HI} \parallel \overline{DF}$
If $\angle DGH = 26.7°$ and $\angle FGI = 23.13°$, find the measure of $\angle FGD$.



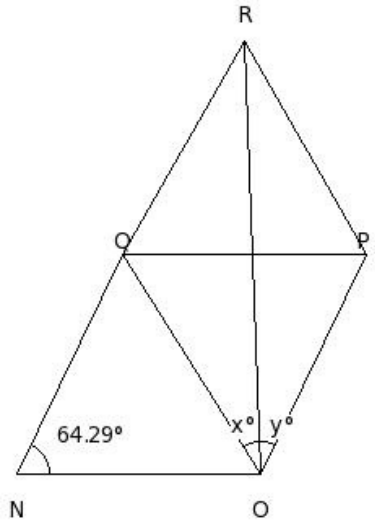
(i) 129.17° (ii) 131.17° (iii) 132.17° (iv) 130.17° (v) 128.17°

27. In the adjoining figure, KLMN is a square. A line segment NP cuts the side LM at P and the diagonal KM at O such that $\angle NOM = 106.39°$ and $\angle OPM = x°$. Find the value of x .



(i) 59.39° (ii) 61.39° (iii) 63.39° (iv) 62.39° (v) 60.39°

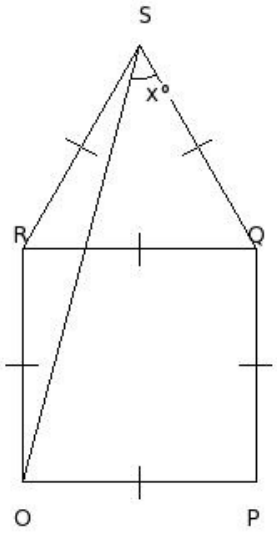
28. In the adjoining figure, NOPQ is a rhombus and $\triangle RQP$ is an equilateral triangle. R and O are on opposite sides of PQ. If $\angle QNO = 64.29°$, find the values of x and y .



(i) x=29°,y=26.85° (ii) x=32°,y=29.85° (iii) x=28°,y=25.85° (iv) x=30°,y=27.85°

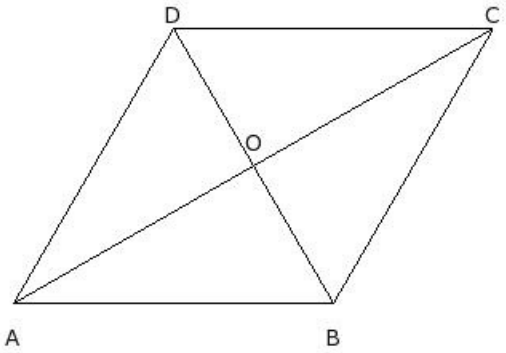
(v) x=31°,y=28.85°

29. In the adjoining figure, equilateral $\triangle RQS$ surmounts square OPQR. If QSO = x°, find the value of x.



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

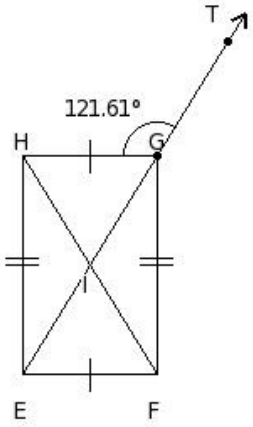
30. In the adjoining figure, $ABCD$ is a rhombus whose diagonals intersect at O.
If $\angle OAB : \angle ABO = 1 : 2$, find the angles of $\triangle OAB$.



(i) $O=92°, A=30°, B=58°$ (ii) $O=88°, A=32°, B=60°$ (iii) $O=88°, A=30°, B=62°$ (iv) $O=90°, A=28°, B=62°$

(v) $O=90°, A=30°, B=60°$

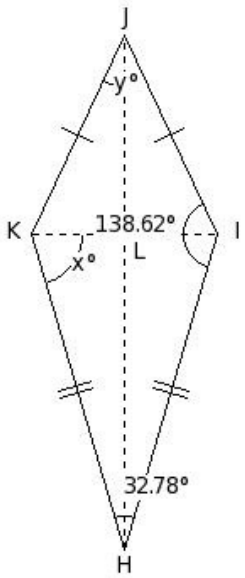
31. In the given figure, $EFGH$ is a rectangle whose diagonals intersect at I.
Diagonal EG is produced to T and $\angle HGT = 121.61°$. Find the angles of $\triangle IHE$.



(i) $I=116.78°, H=31.61°, E=31.61°$ (ii) $I=114.78°, H=33.61°, E=31.61°$ (iii) $I=116.78°, H=29.61°, E=33.61°$

(iv) $I=118.78°, H=31.61°, E=29.61°$ (v) $I=114.78°, H=31.61°, E=33.61°$

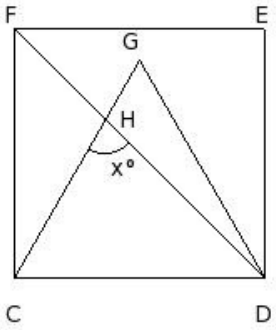
32. In the given figure, HIJK is a kite whose diagonals intersect at L.
If $\angle KHI = 32.78°$ and $\angle HIJ = 138.62°$, calculate $\angle LKH$ and $\angle LJK$.



(i) $x = 74.61°, y = 25.99°$ (ii) $x = 71.61°, y = 22.99°$ (iii) $x = 75.61°, y = 26.99°$ (iv) $x = 72.61°, y = 23.99°$

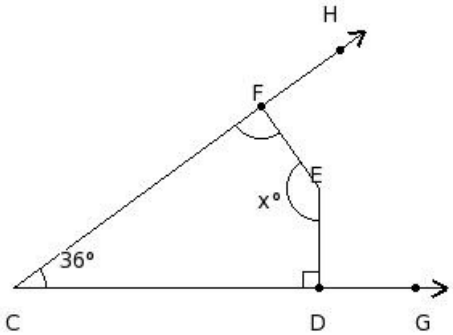
(v) $x = 73.61°, y = 24.99°$

33. $\triangle GCD$ is an equilateral triangle in a square CDEF.
If DF and GC intersect at H, then find the value of x.



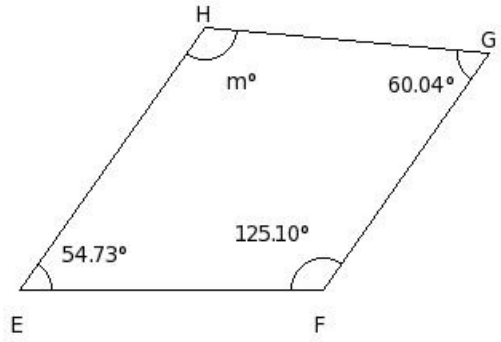
(i) 76° (ii) 73° (iii) 77° (iv) 75° (v) 74°

34. In the adjoining figure, E is a point in the interior of $\angle GCH$.
If $ED \perp CG$ and $EF \perp CH$ and $\angle GCH = 36°$, find the measure of x .



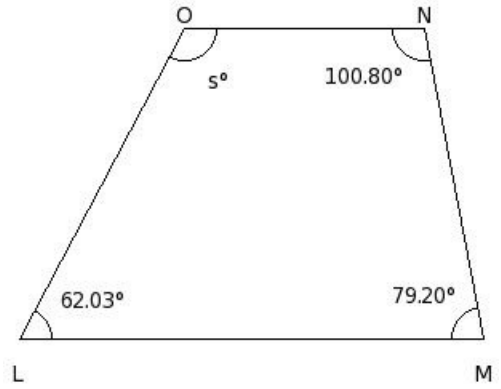
(i) 143° (ii) 146° (iii) 144° (iv) 142° (v) 145°

35. Find the missing angle in the given quadrilateral



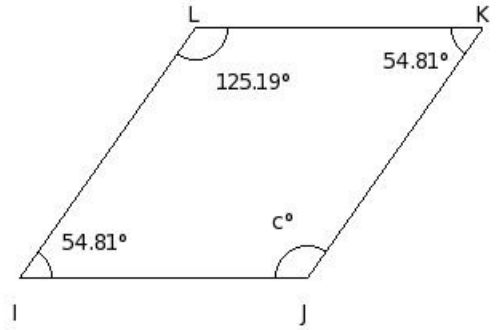
(i) 135.14° (ii) 130.14° (iii) 120.14° (iv) 150.14° (v) 125.14°

36. Find the missing angle in the given trapezium



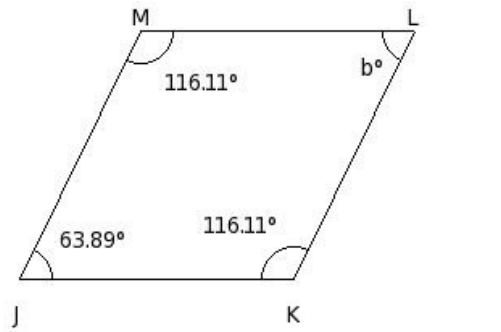
(i) 127.97° (ii) 117.97° (iii) 122.97° (iv) 147.97° (v) 132.97°

37. Find the missing angle in the given parallelogram



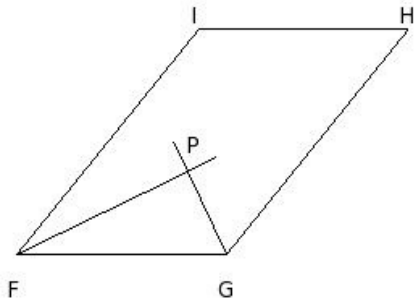
(i) 125.19° (ii) 135.19° (iii) 155.19° (iv) 140.19° (v) 130.19°

38. Find the missing angle in the given rhombus



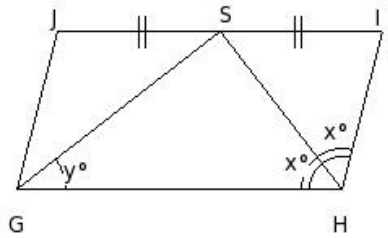
(i) 93.89° (ii) 68.89° (iii) 63.89° (iv) 73.89° (v) 78.89°

39. In the given figure, FGHI is a parallelogram.
If FP and GP are bisector of ∠F & ∠G, find ∠P



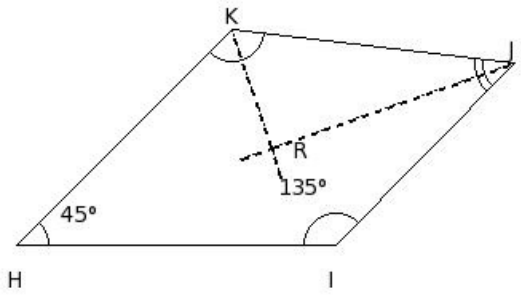
(i) 89° (ii) 90° (iii) 88° (iv) 91° (v) 92°

40. In the given figure, GHIJ is a parallelogram. S is the mid-point of IJ.
HS bisects ∠H. If x = 52°, find angle 'y'.



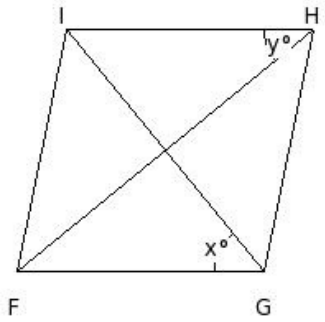
(i) 37° (ii) 40° (iii) 39° (iv) 36° (v) 38°

41. In the given figure, HIJK is a quadrilateral. RK and RJ are bisectors of ∠K & ∠J meeting at R. Find ∠JRK



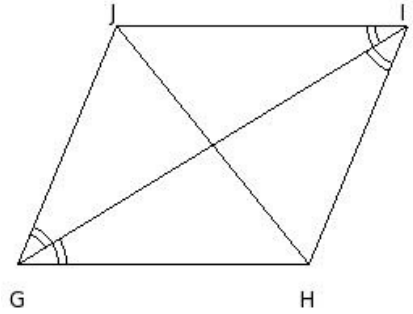
(i) 88.0° (ii) 92.0° (iii) 90.0° (iv) 89.0° (v) 91.0°

42. In the given figure, FGHI is a rhombus. Given x = 51°, find the value of 'y'.



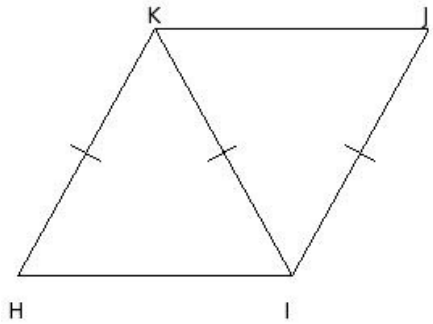
(i) 37° (ii) 40° (iii) 38° (iv) 41° (v) 39°

43. In the given figure, GHIJ is a parallelogram. GI bisects ∠G & ∠I.
Given GI = 9 cm and HJ = 6 cm, find GH



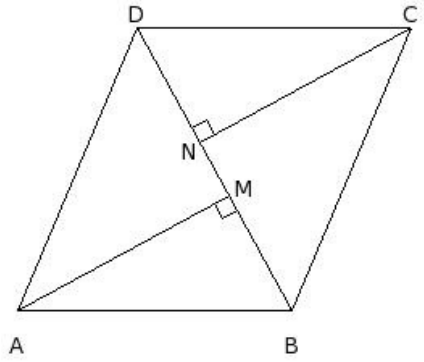
(i) 3.41 cm (ii) 7.41 cm (iii) 6.41 cm (iv) 5.41 cm (v) 4.41 cm

44. In the given figure, HIJK is a parallelogram. IK is the diagonal such that HK = IK = IJ. Given ∠H = 61°, find ∠KIJ



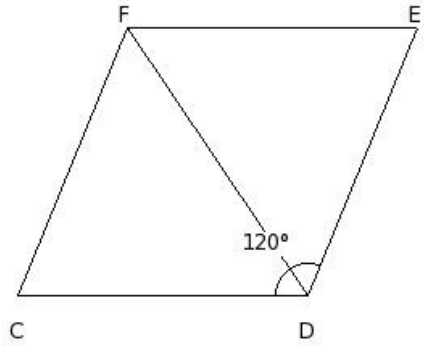
(i) 58° (ii) 57° (iii) 60° (iv) 56° (v) 59°

45. In the given figure, ABCD is a parallelogram. AM and CN are perpendicular to the diagonal BD. Given ∠NCD = 28°, find ∠DBA



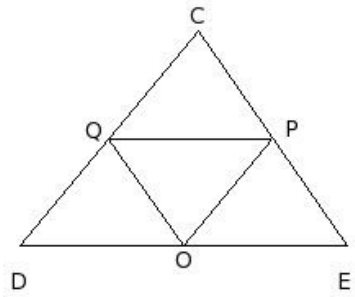
(i) 61° (ii) 63° (iii) 62° (iv) 60° (v) 64°

46. In the given figure, CDEF is a rhombus such that ∠D = 120°. Then △CDF is



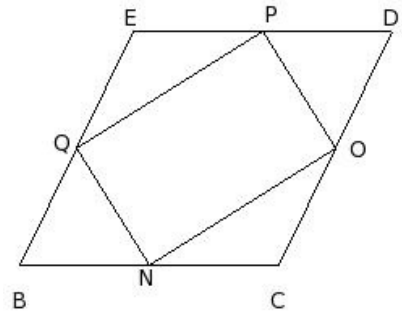
(i) Obtuse angled triangle (ii) Right angled triangle (iii) Isosceles triangle (iv) Equilateral triangle

47. O, P, Q are the mid-points of the sides of triangle CDE.
If the perimeter of the $\triangle CDE$ is 53 cm, the perimeter of $\triangle OPQ$ is



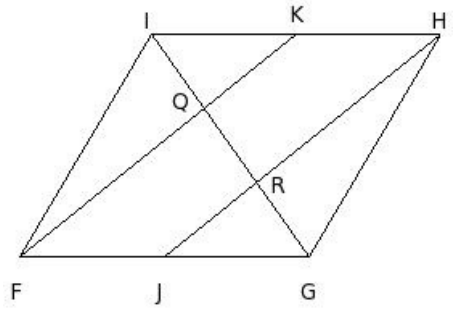
(i) 28.5 cm (ii) 27.5 cm (iii) 25.5 cm (iv) 26.5 cm (v) 24.5 cm

48. BCDE is a rhombus. N, O, P and Q are mid-points of sides BC, CD, DE and EB. Find $\angle OPQ$



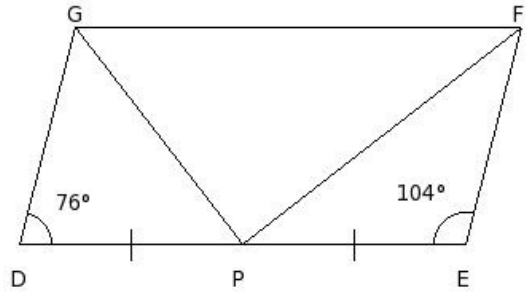
(i) 91° (ii) 89° (iii) 92° (iv) 88° (v) 90°

In the given figure, FGHI is a parallelogram
49. such that J and K are mid-points of sides FG & HI.
FK meets GI at Q and HJ meets GI at R. Given GI = 17 cm, find QI



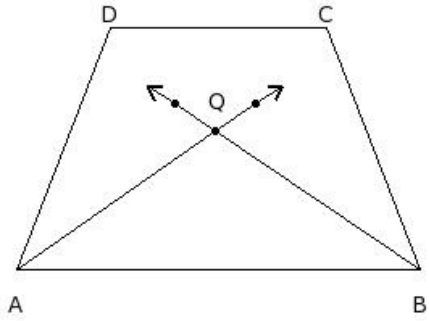
(i) 3.67 cm (ii) 7.67 cm (iii) 5.67 cm (iv) 4.67 cm (v) 6.67 cm

50. In the given figure, DEFG is a parallelogram such that P is the mid-point of DE and DE = 2GD. Find $\angle GPF$



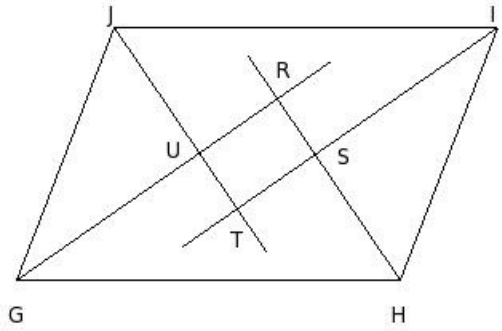
(i) 91° (ii) 89° (iii) 88° (iv) 92° (v) 90°

51. ABCD is an isosceles trapezium. AQ and BQ are angular bisector of ∠A & ∠B. If ∠A = 69°, find ∠AQB



(i) 112° (ii) 110° (iii) 113° (iv) 109° (v) 111°

52. In the given figure, GHIJ is a parallelogram. The bisector of the angles G, H, I & J intersect at R, S, T & U to form a quadrilateral. Find ∠URS



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

Assignment Key

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