EduSahara™ Assignment

Name : Quadrilateral Angle Properties

Chapter : Quadrilaterals

Grade : CBSE Grade IX

1. The angles of a quadrilateral HIJK are in the ratio 7 : 28 : 29 : 56. Find the measure of each angle of the quadrilateral.

(i) H=23°,I=83°,J=85°,K=169° (ii) H=19°,I=86°,J=86°,K=169° (iii) H=22°,I=83°,J=89°,K=166°

(iv) H=21°,I=84°,J=87°,K=168° (v) H=20°,I=82°,J=88°,K=170°

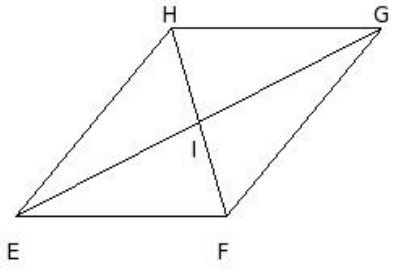
2. Two adjacent angles of a parallelogram OPQR are in the ratio 2 : 4. Find the measure of each of its angles.

(i) O=62°,P=119°,Q=58°,R=121° (ii) O=60°,P=120°,Q=60°,R=120°

(iii) O=59°,P=118°,Q=61°,R=122° (iv) O=58°,P=122°,Q=59°,R=121°

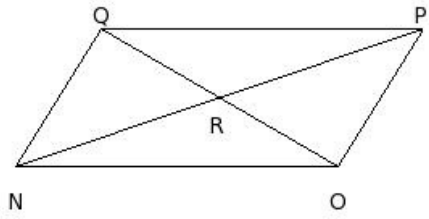
(v) O=61°,P=119°,Q=62°,R=118°

3. In the adjoining figure, EFGH is a parallelogram in which ∠HEG = 23.22°, ∠GEF = 27.17°, ∠HIG = 79.17°. Calculate ∠EFH



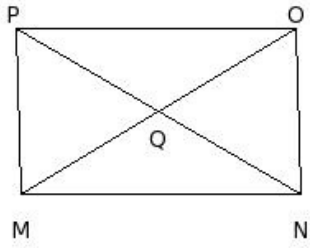
(i) 75.66° (ii) 73.66° (iii) 72.66° (iv) 74.66° (v) 71.66°

4. In the adjoining figure, NOPQ is a parallelogram in which ∠QNP = 39.62°, ∠PNO = 18.43°, ∠QRP = 130.79°. Calculate ∠PQO



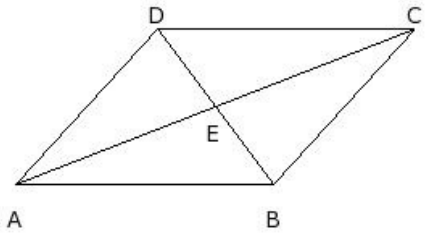
(i) 30.78° (ii) 28.78° (iii) 29.78° (iv) 32.78° (v) 31.78°

5. In the adjoining figure, MNOP is a parallelogram in which ∠PMO = 60.65°, ∠OMN = 31.06°, ∠PQO = 119.07°. Calculate ∠NOM



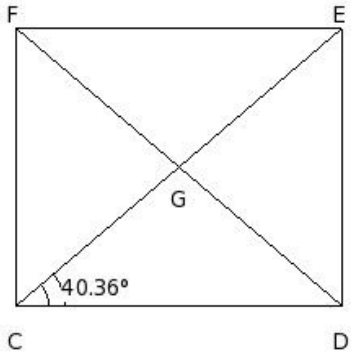
(i) 58.65° (ii) 60.65° (iii) 62.65° (iv) 59.65° (v) 61.65°

6. In the adjoining figure, ABCD is a parallelogram in which $\angle DAC = 26.33°, \angle CAB = 21.16°, \angle DEC = 105.71°$. Calculate $\angle DBC$



(i) 77.38° (ii) 79.38° (iii) 81.38° (iv) 78.38° (v) 80.38°

7. In the adjoining figure, CDEF is a rectangle. If $\angle ECD = 40.36°$, find $\angle FGE$



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

8. Three angles of quadrilateral measure 50.87°, 92.2° and 122.88° respectively. Find the measure of the fourth angle

(i) 95.05° (ii) 94.05° (iii) 96.05° (iv) 92.05° (v) 93.05°

9. Three angles of a quadrilateral are equal and the fourth angle measure 100.98°. What is the measure of each of the equal angles?

(i) 88.34° (ii) 84.34° (iii) 85.34° (iv) 86.34° (v) 87.34°

10. Two angles of a quadrilateral are of measure 43.28° and 123.15° respectively and the other two angles are equal. Find the measure of each of the equal angles.

(i) 95.78° (ii) 96.78° (iii) 97.78° (iv) 98.78° (v) 94.78°

11. A quadrilateral has three acute angles, each measuring 58°. What is the measure of its fourth angle?

(i) 188.00° (ii) 186.00° (iii) 184.00° (iv) 185.00° (v) 187.00°

12. One angle of a parallelogram measures $F = 47.91°$.
Find the measure of each of its remaining angles.

(i) $G=130.09°, H=45.91°, I=130.09°$ (ii) $G=134.09°, H=49.91°, I=134.09°$

(iii) $G=131.09°, H=46.91°, I=131.09°$ (iv) $G=133.09°, H=48.91°, I=133.09°$

(v) $G=132.09°, H=47.91°, I=132.09°$

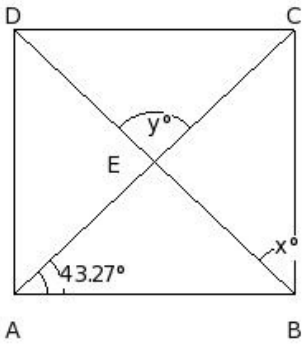
13. Two adjacent angles of a parallelogram are in the ratio $7 : 53$.
Find the measure of each of its angles.

(i) $A=23°, B=158°, C=19°, D=160°$ (ii) $A=20°, B=157°, C=22°, D=161°$

(iii) $A=21°, B=159°, C=21°, D=159°$ (iv) $A=19°, B=161°, C=20°, D=160°$

(v) $A=22°, B=158°, C=23°, D=157°$

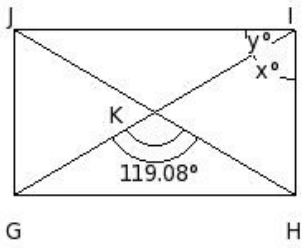
14. In the figure given below, ABCD is a rectangle. Find the values of x and y



(i) x=46.74°,y=93.48° (ii) x=45.74°,y=92.48° (iii) x=44.74°,y=91.48° (iv) x=48.74°,y=95.48°

(v) x=47.74°,y=94.48°

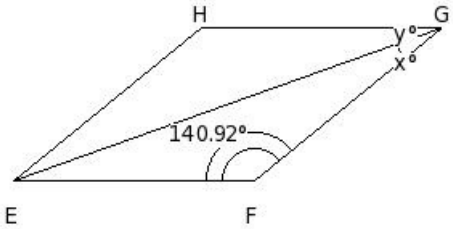
15. In the figure given below, GHIJ is a rectangle. Find the values of x and y



(i) x=59.54°,y=30.46° (ii) x=58.54°,y=29.46° (iii) x=57.54°,y=28.46° (iv) x=61.54°,y=32.46°

(v) x=60.54°,y=31.46°

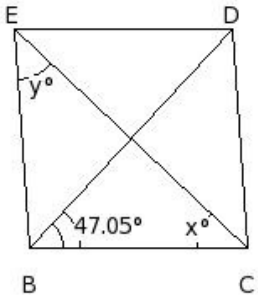
16. In the figure given below, EFGH is a rhombus. Find the values of x and y



(i) x=17.54°,y=17.54° (ii) x=19.54°,y=19.54° (iii) x=21.54°,y=21.54° (iv) x=20.54°,y=20.54°

(v) x=18.54°,y=18.54°

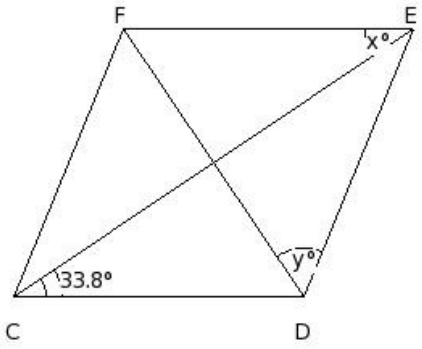
17. In the figure given below, BCDE is a rhombus. Find the values of x and y



(i) x=40.95°,y=40.95° (ii) x=44.95°,y=44.95° (iii) x=41.95°,y=41.95° (iv) x=42.95°,y=42.95°

(v) x=43.95°,y=43.95°

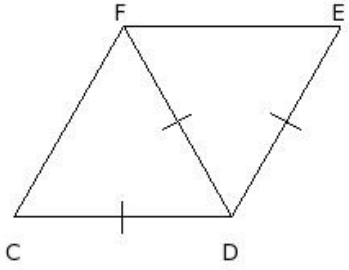
18. In the figure given below, CDEF is a rhombus. Find the values of x and y



(i) $x=34.8°, y=57.2°$ (ii) $x=31.8°, y=54.2°$ (iii) $x=32.8°, y=55.2°$ (iv) $x=35.8°, y=58.2°$

(v) $x=33.8°, y=56.2°$

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

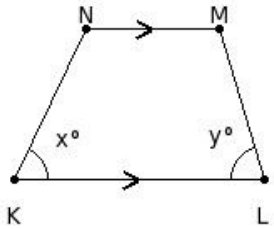


(i) $C=62°, D=119°, E=58°, F=121°$ (ii) $C=60°, D=120°, E=60°, F=120°$

(iii) $C=58°, D=122°, E=59°, F=121°$ (iv) $C=59°, D=118°, E=61°, F=122°$

(v) $C=61°, D=119°, E=62°, F=118°$

20. In the adjoining figure, KLMN is a trapezium in which $\overline{KL} \parallel \overline{MN}$.
If $x = 64.46°$ and $y = 73.3°$, find the measures of $\angle M$ and $\angle N$.

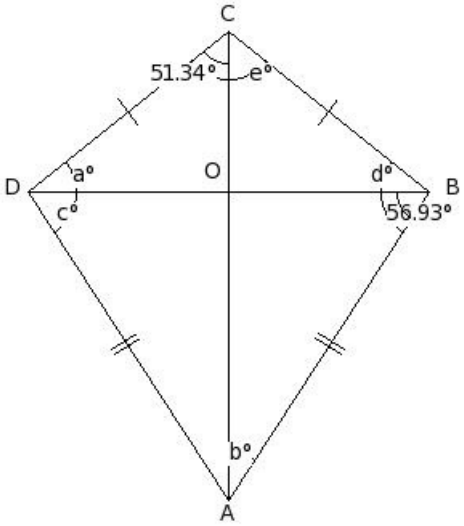


(i) $M=106.7°, N=115.54°$ (ii) $M=107.7°, N=116.54°$ (iii) $M=104.7°, N=113.54°$

(iv) $M=108.7°, N=117.54°$ (v) $M=105.7°, N=114.54°$

21. 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 ∠OCD = 51.34° and ∠ABO = 56.93°, find the measure of each of the angles marked a,b,c,d and e.



(i) a = 38.66° , b = 34.07° , c = 55.93° , d = 40.66° , e = 49.34°

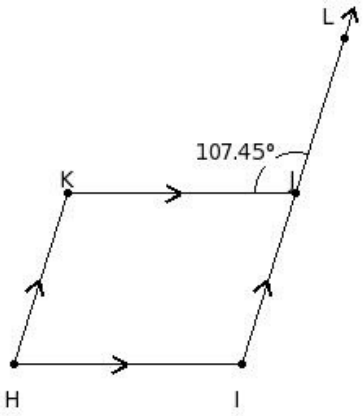
(ii) a = 38.66° , b = 34.07° , c = 56.93° , d = 38.66° , e = 51.34°

(iii) a = 38.66° , b = 33.07° , c = 56.93° , d = 38.66° , e = 51.34°

(iv) a = 38.66° , b = 34.07° , c = 55.93° , d = 38.66° , e = 51.34°

(v) a = 38.66° , b = 34.07° , c = 55.93° , d = 40.66° , e = 51.34°

22. In the adjoining figure, side IJ of parallelogram HIJK has been produced to L. If ∠KJL = 107.45° , find the measure of each angle of the parallelogram.

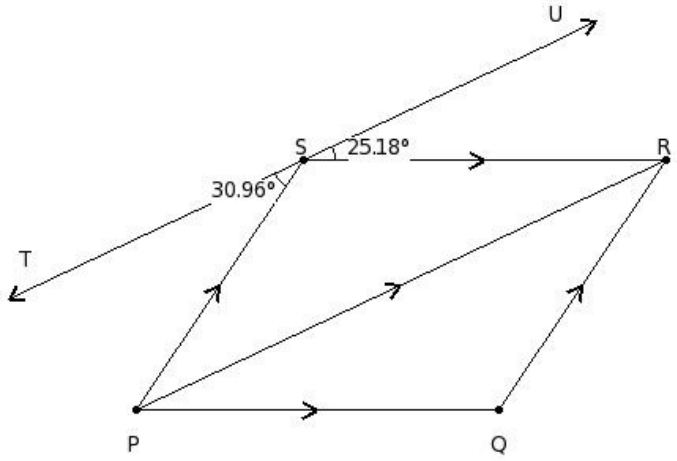


(i) H=73.55°,I=106.45°,J=74.55°,K=105.45° (ii) H=71.55°,I=105.45°,J=73.55°,K=109.45°

(iii) H=72.55°,I=107.45°,J=72.55°,K=107.45° (iv) H=70.55°,I=109.45°,J=71.55°,K=108.45°

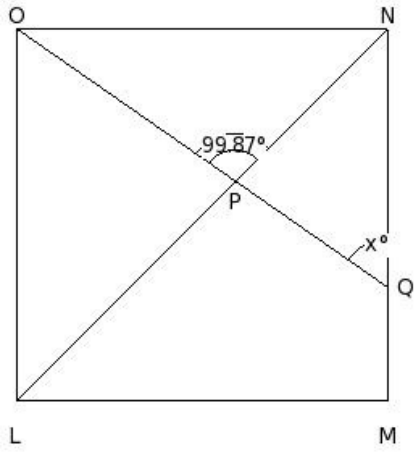
(v) H=74.55°,I=106.45°,J=70.55°,K=108.45°

23. In the adjoining figure, PQRS is a parallelogram and TU is such that $\overline{TU} \parallel \overline{PR}$
If $\angle PST = 30.96°$ and $\angle RSU = 25.18°$, find the measure of $\angle RSP$.



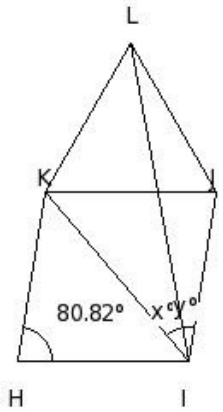
(i) 124.86° (ii) 125.86° (iii) 121.86° (iv) 122.86° (v) 123.86°

24. In the adjoining figure, LMNO is a square. A line segment OQ cuts the side MN at Q and the diagonal LN at P such that $\angle OPN = 99.87°$ and $\angle PQN = x°$. Find the value of x .



(i) 54.87° (ii) 56.87° (iii) 53.87° (iv) 52.87° (v) 55.87°

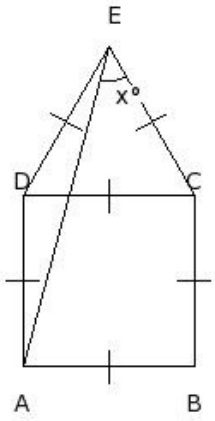
25. In the adjoining figure, HIJK is a rhombus and $\triangle LKJ$ is an equilateral triangle. L and I are on opposite sides of JK. If $\angle KHI = 80.82°$, find the values of x and y .



(i) $x=32°, y=21.59°$ (ii) $x=30°, y=19.59°$ (iii) $x=31°, y=20.59°$ (iv) $x=28°, y=17.59°$

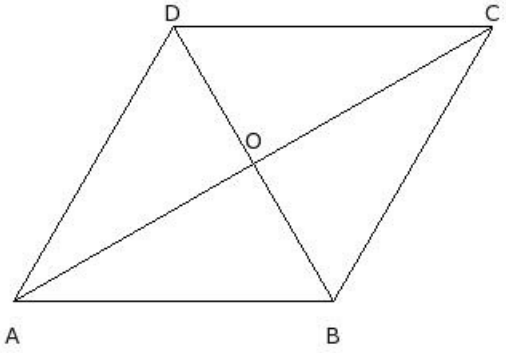
(v) $x=29°, y=18.59°$

26. In the adjoining figure, equilateral $\triangle DCE$ surmounts square ABCD. If CEA = x°, find the value of x.



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

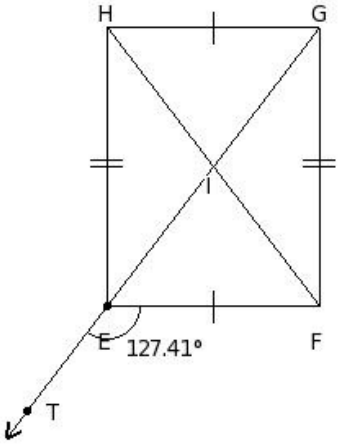
27. In the adjoining figure, ABCD is a rhombus whose diagonals intersect at O.
If $\angle OAB : \angle ABO = 1 : 2$, find the angles of $\triangle OAB$.



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

(v) O=92°,A=30°,B=58°

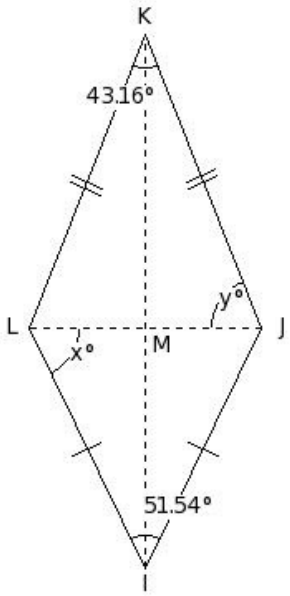
28. In the given figure, EFGH is a rectangle whose diagonals intersect at I.
Diagonal EG is produced to T and $\angle FET = 127.41°$. Find the angles of $\triangle IGH$.



(i) I=74.82°,G=52.59°,H=52.59° (ii) I=74.82°,G=50.59°,H=54.59° (iii) I=72.82°,G=54.59°,H=52.59°

(iv) I=76.82°,G=52.59°,H=50.59° (v) I=72.82°,G=52.59°,H=54.59°

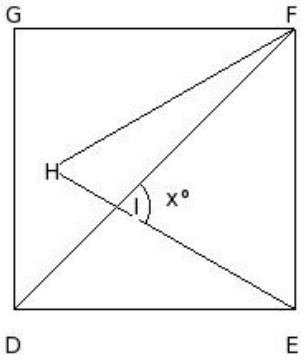
29. In the given figure, IJKL is a kite whose diagonals intersect at M.
If ∠LIJ = 51.54° and ∠JKL = 43.16°, calculate ∠MLI and ∠MJK.



(i) x=62.23°,y=66.42° (ii) x=64.23°,y=68.42° (iii) x=66.23°,y=70.42° (iv) x=65.23°,y=69.42°

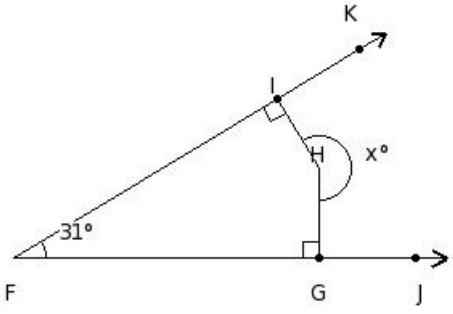
(v) x=63.23°,y=67.42°

30. △HEF is an equilateral triangle in a square DEFG.
If DF and HE intersect at I, then find the value of x.



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

31. In the adjoining figure, H is a point in the interior of ∠JFK.
If HG⊥FJ and HI⊥FK and ∠JFK = 31°, find the measure of x .



(i) 210° (ii) 209° (iii) 212° (iv) 213° (v) 211°

32. The measures of three angles of a quadrilateral are 85.46°, 100.05° and 66.42°. Find the fourth angle

(i) 138.07° (ii) 123.07° (iii) 113.07° (iv) 108.07° (v) 118.07°

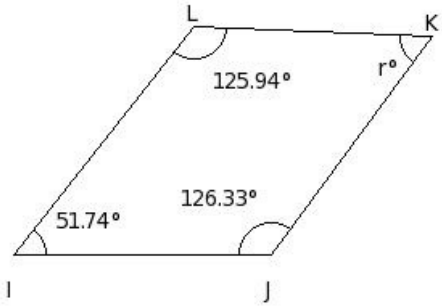
33. Sum of the interior angles in a quadrilateral is

(i) 375° (ii) 370° (iii) 360° (iv) 365° (v) 390°

34. How many diagonals does a quadrilateral have?

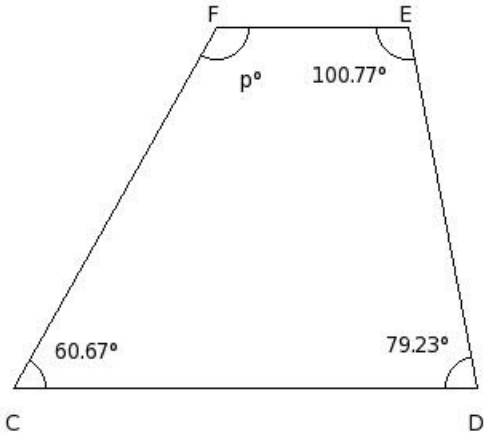
(i) 1 (ii) 0 (iii) 3 (iv) 4 (v) 2

35. Find the missing angle in the given quadrilateral



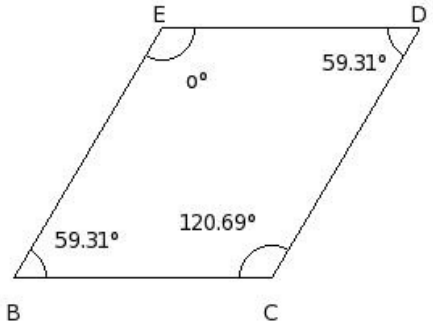
(i) 60.99° (ii) 65.99° (iii) 85.99° (iv) 55.99° (v) 70.99°

36. Find the missing angle in the given trapezium



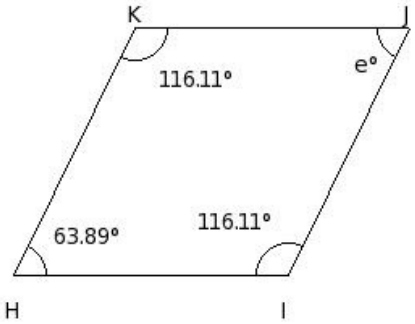
(i) 124.33° (ii) 119.33° (iii) 129.33° (iv) 149.33° (v) 134.33°

37. Find the missing angle in the given parallelogram



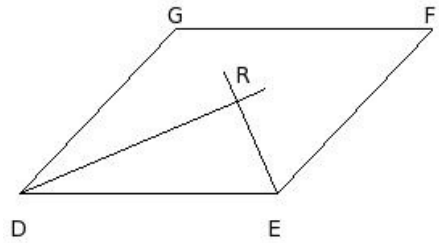
(i) 150.69° (ii) 130.69° (iii) 135.69° (iv) 125.69° (v) 120.69°

38. Find the missing angle in the given rhombus



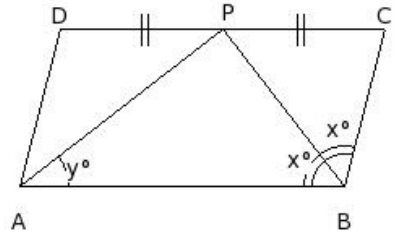
(i) 93.89° (ii) 73.89° (iii) 63.89° (iv) 68.89° (v) 78.89°

39. In the given figure, DEFG is a parallelogram.
If DR and ER are bisector of ∠D & ∠E, find ∠R



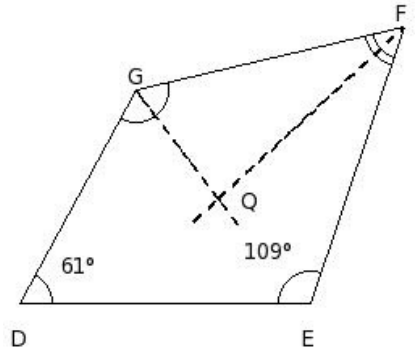
(i) 89° (ii) 91° (iii) 90° (iv) 92° (v) 88°

40. In the given figure, ABCD is a parallelogram. P is the mid-point of CD.
BP bisects ∠B. If x = 52°, find angle 'y'.



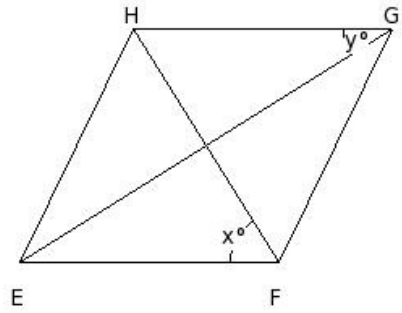
(i) 37° (ii) 36° (iii) 38° (iv) 39° (v) 40°

41. In the given figure, DEFG is a quadrilateral. QG and QF are bisectors of ∠G & ∠F meeting at Q. Find ∠FQG



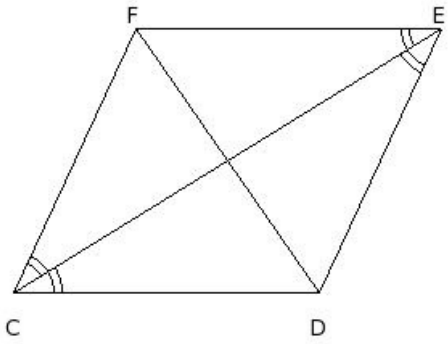
(i) 83.0° (ii) 87.0° (iii) 85.0° (iv) 86.0° (v) 84.0°

42. In the given figure, EFGH is a rhombus. Given x = 58°, find the value of 'y'.



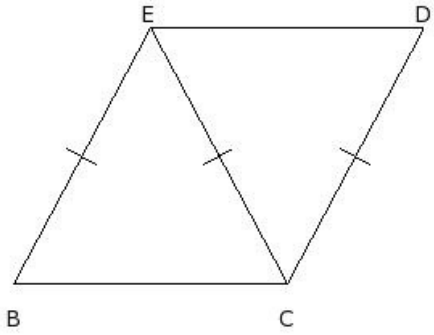
(i) 33° (ii) 32° (iii) 34° (iv) 31° (v) 30°

43. In the given figure, CDEF is a parallelogram. CE bisects ∠C & ∠E.
Given CE = 12 cm and DF = 8 cm, find CD



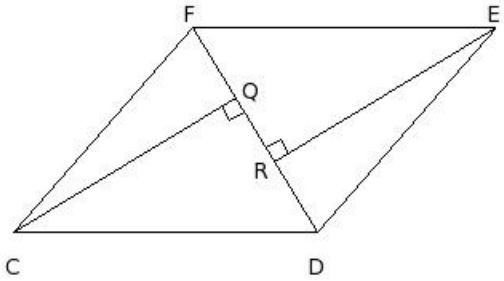
(i) 5.21 cm (ii) 7.21 cm (iii) 6.21 cm (iv) 9.21 cm (v) 8.21 cm

44. In the given figure, BCDE is a parallelogram. CE is the diagonal
such that BE = CE = CD. Given ∠B = 62°, find ∠ECD



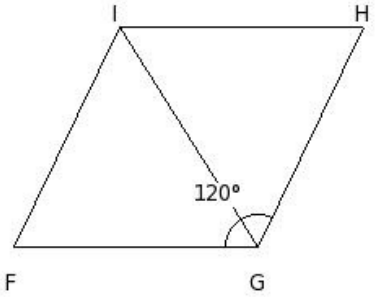
(i) 54° (ii) 56° (iii) 57° (iv) 55° (v) 58°

45. In the given figure, CDEF is a parallelogram. CQ and ER are perpendicular to the diagonal DF. Given ∠QCD = 31°, find ∠EFD



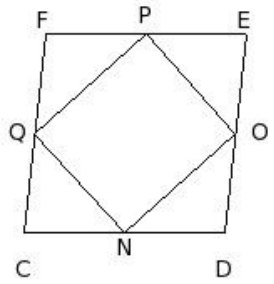
(i) 58° (ii) 61° (iii) 59° (iv) 60° (v) 57°

46. In the given figure, FGHI is a rhombus such that ∠G = 120°. Then △FGI is



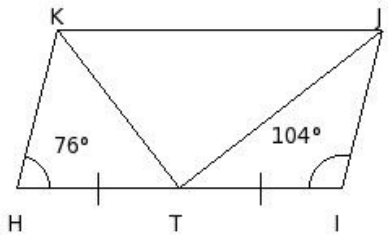
(i) Isosceles triangle (ii) Obtuse angled triangle (iii) Right angled triangle (iv) Equilateral triangle

47. CDEF is a rhombus. N, O, P and Q are mid-points of sides CD, DE, EF and FC. Find ∠OPQ



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

48. In the given figure, HIJK is a parallelogram such that T is the mid-point of HI and HI = 2KH. Find ∠KTJ



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

Assignment Key

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