

EduSahara™ Learning Center Assignment**Grade : Class IX, SSC****Chapter : Lines and Angles****Name : Triangle Angle Properties**

1. In $\triangle EFG$, if $\angle E = 70^\circ$ and $\angle F = 53^\circ$, find the measure of $\angle G$

- (i) $G = 58^\circ$ (ii) $G = 57^\circ$ (iii) $G = 56^\circ$ (iv) $G = 55^\circ$ (v) $G = 59^\circ$
-

2. In $\triangle JKL$, if $\angle J = 30^\circ$ and $\angle K = \angle L$, find the measure of each of the equal angles of the triangle

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

3. One angle of a triangle measures 45° and the other two angles are in the ratio 11 : 16. Find these angles.

- (i) $B = 53^\circ, C = 78^\circ$
(ii) $B = 57^\circ, C = 82^\circ$
(iii) $B = 54^\circ, C = 79^\circ$
(iv) $B = 55^\circ, C = 80^\circ$
(v) $B = 56^\circ, C = 81^\circ$
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4. In a right-angled triangle, the two acute angles are in the ratio 1 : 2. Find these angles.

- (i) $A = 31^\circ, C = 61^\circ$
(ii) $A = 32^\circ, C = 62^\circ$
(iii) $A = 28^\circ, C = 58^\circ$
(iv) $A = 30^\circ, C = 60^\circ$
(v) $A = 29^\circ, C = 59^\circ$
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5. One of the two equal angles of an isosceles triangle measures 35° . Find the measure of each angle of the triangle.

- (i) $A = 33^\circ, B = 35^\circ, C = 112^\circ$
(ii) $A = 35^\circ, B = 35^\circ, C = 110^\circ$
(iii) $A = 35^\circ, B = 33^\circ, C = 112^\circ$
(iv) $A = 37^\circ, B = 35^\circ, C = 108^\circ$
(v) $A = 33^\circ, B = 37^\circ, C = 110^\circ$
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6. Find the measure of each of the two equal angles of an isosceles right-angled triangle.

- (i) 45° (ii) 47° (iii) 46° (iv) 43° (v) 44°
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7. If all the three angles of a triangle are of the same measure, find the measure of each of the angles.

- (i) 60° (ii) 58° (iii) 61° (iv) 59° (v) 62°
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8. In a right-angled triangle if one of the acute angles is 26° , find the measure of the other acute angle.

- (i) 66° (ii) 63° (iii) 64° (iv) 65° (v) 62°
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9. The vertical angle of an isosceles triangle is twice the sum of its base angles. Find each angle of the triangle.

- (i) $A = 120^\circ, B = 28^\circ, C = 32^\circ$
- (ii) $A = 122^\circ, B = 30^\circ, C = 28^\circ$
- (iii) $A = 118^\circ, B = 32^\circ, C = 30^\circ$
- (iv) $A = 120^\circ, B = 30^\circ, C = 30^\circ$
- (v) $A = 118^\circ, B = 30^\circ, C = 32^\circ$

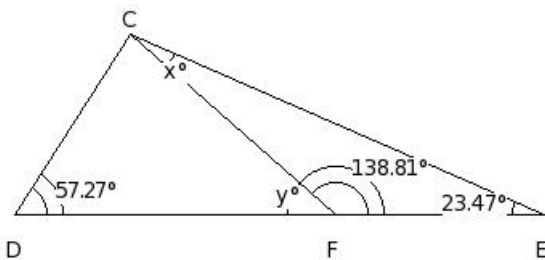
10. In an isosceles triangle, each base angle is four times its vertical angle. Find each angle of the triangle.

- (i) $A = 20^\circ, B = 78^\circ, C = 82^\circ$
- (ii) $A = 18^\circ, B = 80^\circ, C = 82^\circ$
- (iii) $A = 22^\circ, B = 80^\circ, C = 78^\circ$
- (iv) $A = 20^\circ, B = 80^\circ, C = 80^\circ$
- (v) $A = 18^\circ, B = 82^\circ, C = 80^\circ$

11. The ratio between the base angle and the vertical angle of an isosceles triangle is 11 : 14. Find each angle of the triangle

- (i) $A = 68^\circ, B = 57^\circ, C = 55^\circ$
- (ii) $A = 72^\circ, B = 55^\circ, C = 53^\circ$
- (iii) $A = 68^\circ, B = 55^\circ, C = 57^\circ$
- (iv) $A = 70^\circ, B = 53^\circ, C = 57^\circ$
- (v) $A = 70^\circ, B = 55^\circ, C = 55^\circ$

12. In the given figure, find the values of x and y .



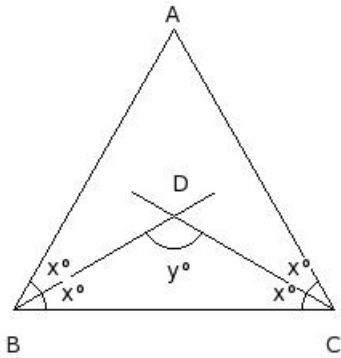
- (i) $x = 17.72^\circ, y = 41.19^\circ$
- (ii) $x = 15.72^\circ, y = 39.19^\circ$
- (iii) $x = 18.72^\circ, y = 42.19^\circ$
- (iv) $x = 16.72^\circ, y = 40.19^\circ$
- (v) $x = 19.72^\circ, y = 43.19^\circ$

13. Each of the two equal angles of an isosceles triangle is half the third angle. Find the angles of the triangle

- (i) $X = 43^\circ, Y = 92^\circ, Z = 45^\circ$
- (ii) $X = 45^\circ, Y = 90^\circ, Z = 45^\circ$
- (iii) $X = 47^\circ, Y = 90^\circ, Z = 43^\circ$
- (iv) $X = 43^\circ, Y = 90^\circ, Z = 47^\circ$

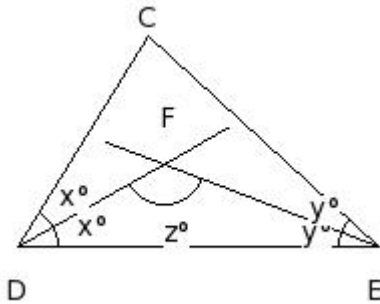
(v) $X = 45^\circ$, $Y = 88^\circ$, $Z = 47^\circ$

14. In the given figure, $\triangle ABC$ is a triangle in which $\angle A = \angle B = \angle C$.
This bisectors of $\angle B$ and $\angle C$ intersect at D . Find $\angle D =$



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

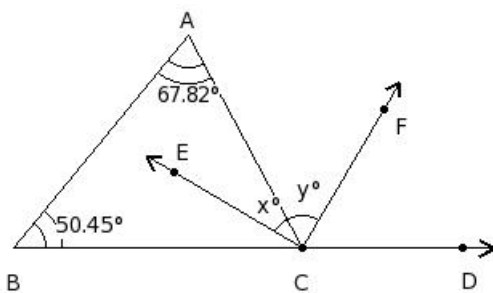
15. In the given figure, $\triangle CDE$ is a triangle in which $\angle D = 58.24^\circ$ and $\angle E = 42.4^\circ$.
If 'z' is the angle between the bisector of $\angle D$ and $\angle E$, then find z.



- (i) 130.68° (ii) 131.68° (iii) 127.68° (iv) 129.68° (v) 128.68°

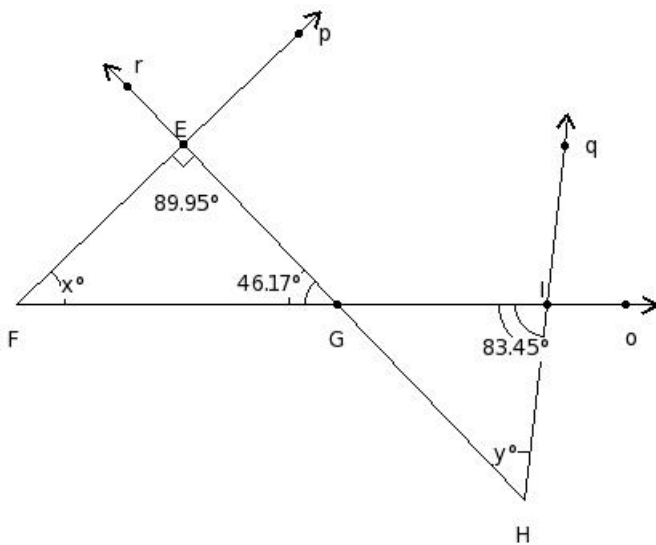
In the given figure, $\angle A = 67.82^\circ$ and $\angle B = 50.45^\circ$.

16. Side BC is produced to D , so that $\angle BCA$ and $\angle ACD$ form a linear pair.
If $\overrightarrow{CE}$ and $\overrightarrow{CF}$ are the bisectors of $\angle BCA$ and $\angle ACD$, find x and y .



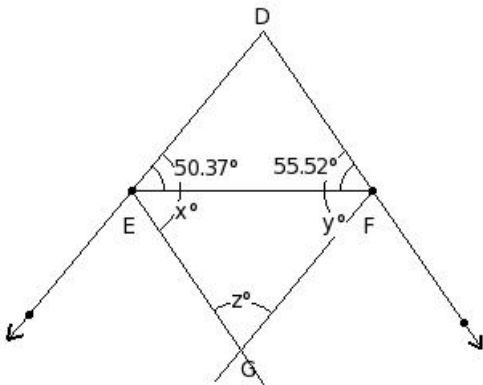
- (i) $x = 31.86^\circ$, $y = 60.14^\circ$
(ii) $x = 28.86^\circ$, $y = 57.14^\circ$
(iii) $x = 29.86^\circ$, $y = 58.14^\circ$
(iv) $x = 32.86^\circ$, $y = 61.14^\circ$
(v) $x = 30.86^\circ$, $y = 59.14^\circ$

17. In the given figure, find the values of x and y



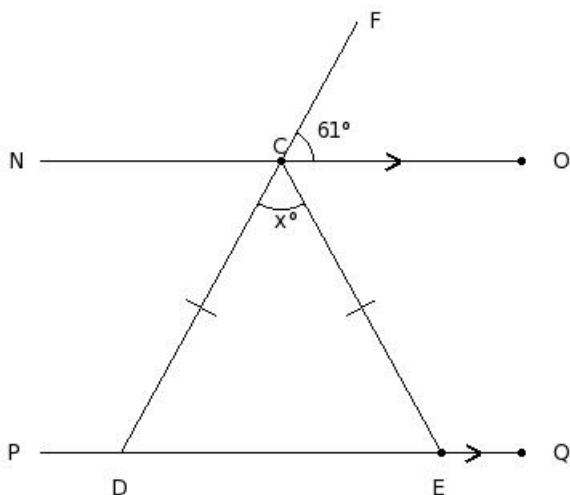
- (i) $x = 43.88^\circ$, $y = 50.38^\circ$
- (ii) $x = 44.88^\circ$, $y = 51.38^\circ$
- (iii) $x = 45.88^\circ$, $y = 52.38^\circ$
- (iv) $x = 42.88^\circ$, $y = 49.38^\circ$
- (v) $x = 41.88^\circ$, $y = 48.38^\circ$

18. In the given figure, $\triangle DEF$ in which $\angle E = 50.37^\circ$ and $\angle F = 55.52^\circ$. DG and EF bisect each other. Find the value of z



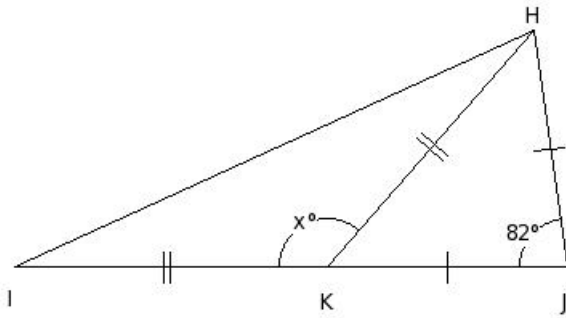
- (i) $z = 74.11^\circ$ (ii) $z = 75.11^\circ$ (iii) $z = 73.11^\circ$
- (iv) $z = 72.11^\circ$ (v) $z = 76.11^\circ$

19. In the given figure, $NO \parallel PQ$, $\angle FCO = 61^\circ$ and $CD = EC$. Find the measure of x.



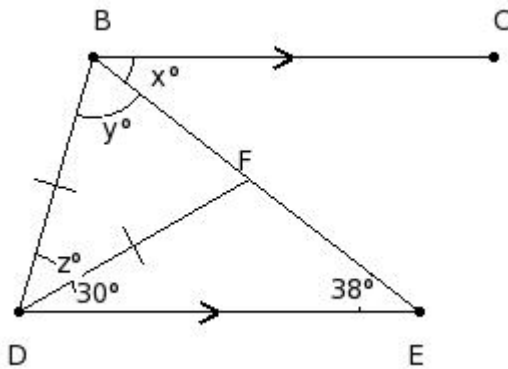
- (i) $x = 58^\circ$ (ii) $x = 57^\circ$ (iii) $x = 60^\circ$
 (iv) $x = 56^\circ$ (v) $x = 59^\circ$

20. In the given figure, find the value of x .



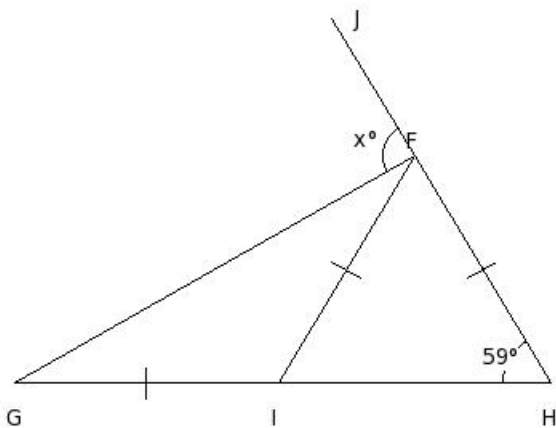
- (i) $x = 130^\circ$ (ii) $x = 131^\circ$ (iii) $x = 133^\circ$
 (iv) $x = 132^\circ$ (v) $x = 129^\circ$

21. In the given figure, $BC \parallel DE$ and $BD = DF$. Find the values of x, y and z .



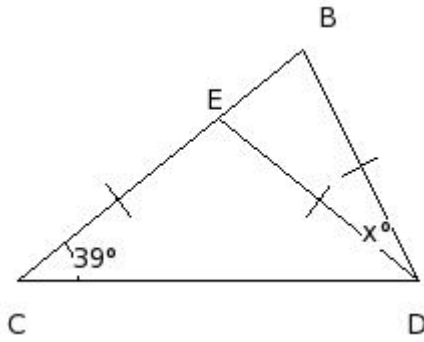
- (i) $x = 38^\circ, y = 66^\circ, z = 46^\circ$
 (ii) $x = 36^\circ, y = 70^\circ, z = 44^\circ$
 (iii) $x = 40^\circ, y = 68^\circ, z = 42^\circ$
 (iv) $x = 38^\circ, y = 68^\circ, z = 44^\circ$
 (v) $x = 36^\circ, y = 68^\circ, z = 46^\circ$

22. In the given figure, if $HF = FI = GI$. Find the value of x .



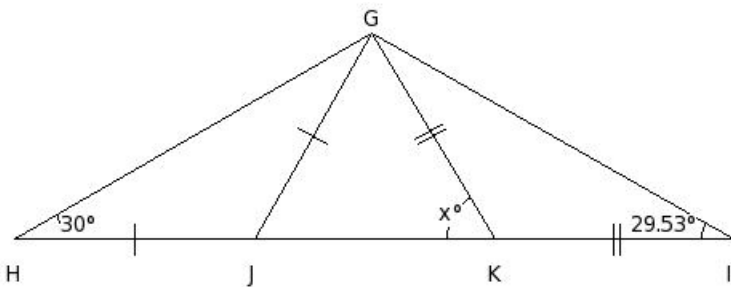
- (i) $x = 86.5^\circ$ (ii) $x = 90.5^\circ$ (iii) $x = 89.5^\circ$
 (iv) $x = 87.5^\circ$ (v) $x = 88.5^\circ$

23. In the given figure, if $DB = DE = EC$, find the value of x



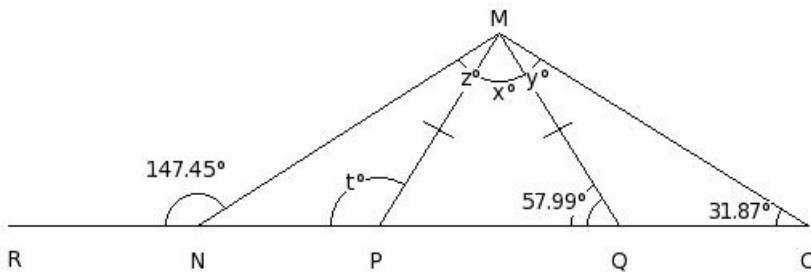
- (i) $x = 24^\circ$ (ii) $x = 25^\circ$ (iii) $x = 23^\circ$
 (iv) $x = 22^\circ$ (v) $x = 26^\circ$

24. In the given figure, if $JG = HJ$ and $GK = KI$, find the value of x .



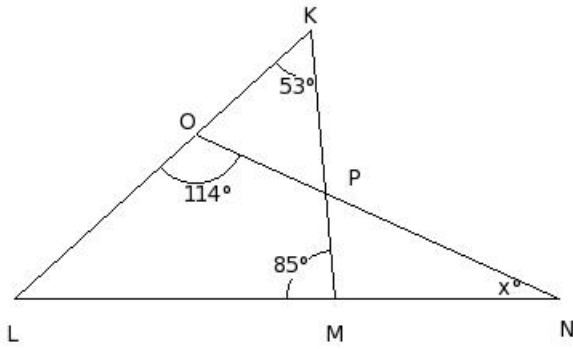
- (i) $x = 58.06^\circ$ (ii) $x = 61.06^\circ$ (iii) $x = 60.06^\circ$
 (iv) $x = 59.06^\circ$ (v) $x = 57.06^\circ$

25. In the given figure, if $MP = QM$, find the values of x , y , z and t



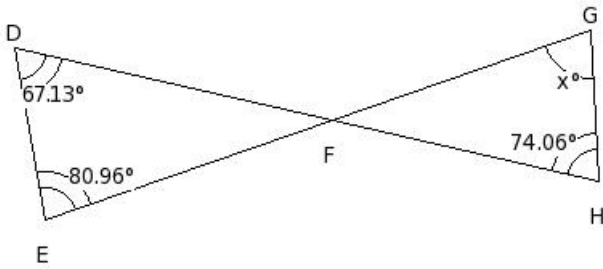
- (i) $x = 64.02^\circ$, $y = 24.12^\circ$, $z = 23.44^\circ$, $t = 122.01^\circ$
 (ii) $x = 64.02^\circ$, $y = 26.12^\circ$, $z = 26.44^\circ$, $t = 123.01^\circ$
 (iii) $x = 64.02^\circ$, $y = 26.12^\circ$, $z = 25.44^\circ$, $t = 122.01^\circ$
 (iv) $x = 64.02^\circ$, $y = 28.12^\circ$, $z = 27.44^\circ$, $t = 122.01^\circ$
 (v) $x = 64.02^\circ$, $y = 26.12^\circ$, $z = 24.44^\circ$, $t = 121.01^\circ$

26. In the given figure, calculate the value of x .



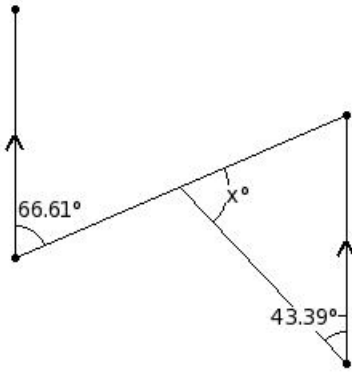
- (i) $x = 26^\circ$ (ii) $x = 24^\circ$ (iii) $x = 23^\circ$
 (iv) $x = 25^\circ$ (v) $x = 22^\circ$

27. In the given figure, calculate the value of x .



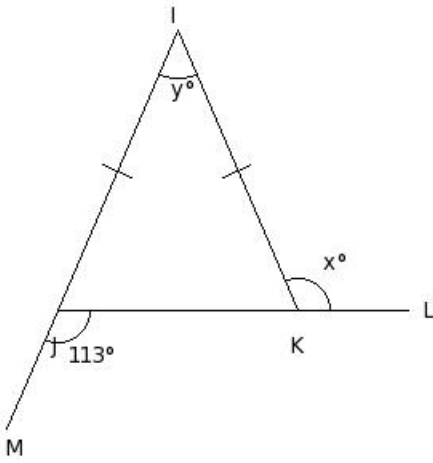
- (i) $x = 73.03^\circ$ (ii) $x = 75.03^\circ$ (iii) $x = 74.03^\circ$
 (iv) $x = 72.03^\circ$ (v) $x = 76.03^\circ$

28. In the given figure, calculate the value of x .



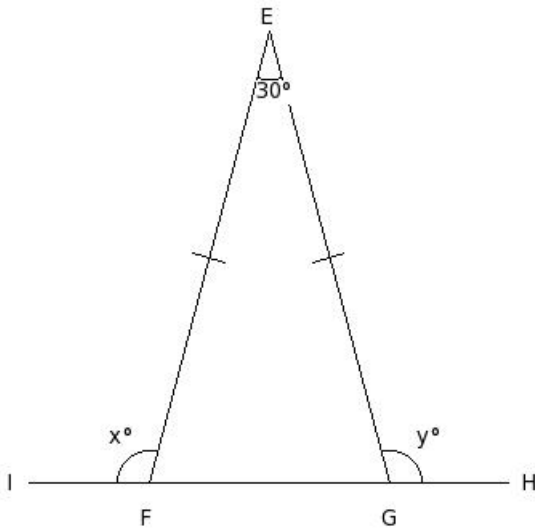
- (i) $x = 69^\circ$ (ii) $x = 71^\circ$ (iii) $x = 68^\circ$
 (iv) $x = 70^\circ$ (v) $x = 72^\circ$

29. Find the unknown marked angles in the following figure



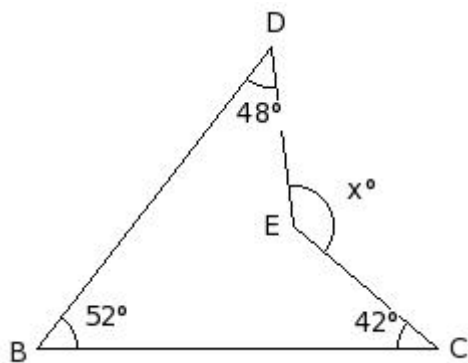
- (i) $x = 112^\circ$, $y = 45^\circ$ (ii) $x = 115^\circ$, $y = 48^\circ$ (iii) $x = 114^\circ$, $y = 47^\circ$
 (iv) $x = 113^\circ$, $y = 46^\circ$ (v) $x = 111^\circ$, $y = 44^\circ$

30. Find the unknown marked angles in the following figure



- (i) $x = 104^\circ$, $y = 104^\circ$
 (ii) $x = 106^\circ$, $y = 106^\circ$
 (iii) $x = 107^\circ$, $y = 107^\circ$
 (iv) $x = 103^\circ$, $y = 103^\circ$
 (v) $x = 105^\circ$, $y = 105^\circ$

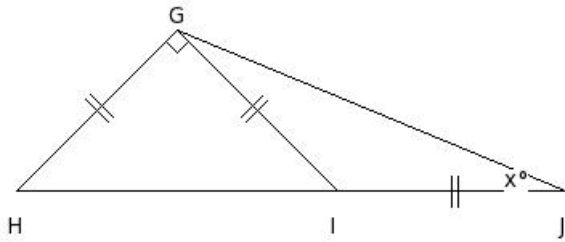
31. In the given figure, calculate the value of x .



- (i) $x = 140^\circ$ (ii) $x = 143^\circ$ (iii) $x = 142^\circ$

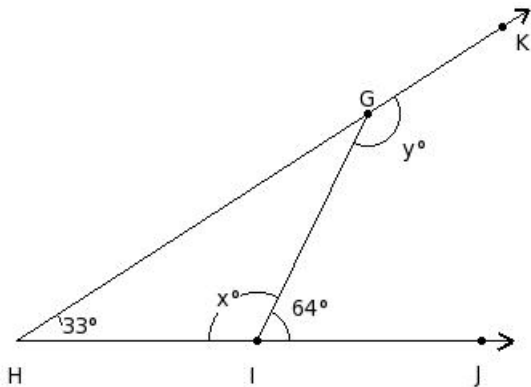
- (iv) $x = 141^\circ$ (v) $x = 144^\circ$

32. In the given figure, calculate the value of x .



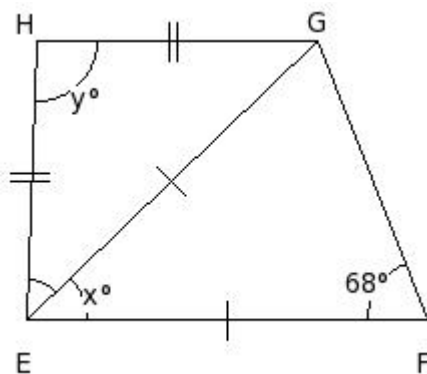
- (i) $x = 23.5^\circ$ (ii) $x = 20.5^\circ$ (iii) $x = 22.5^\circ$
 (iv) $x = 21.5^\circ$ (v) $x = 24.5^\circ$

33. Find the unknown marked angles in the following figure



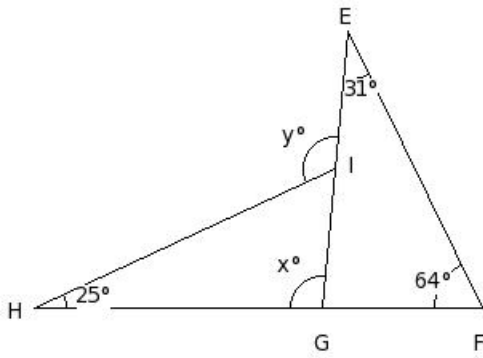
- (i) $x = 116^\circ, y = 149^\circ$
 (ii) $x = 115^\circ, y = 148^\circ$
 (iii) $x = 118^\circ, y = 151^\circ$
 (iv) $x = 117^\circ, y = 150^\circ$
 (v) $x = 114^\circ, y = 147^\circ$

34. In the following figure $EF \parallel HG$, find the values of x and y .



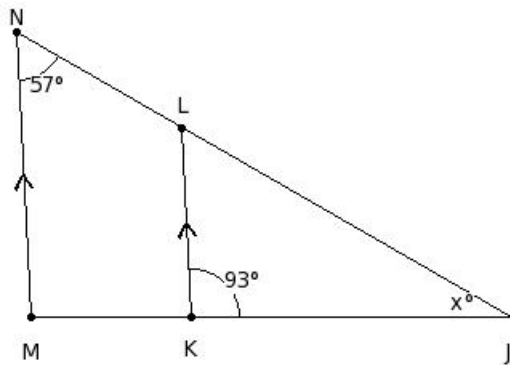
- (i) $x = 45^\circ, y = 93^\circ$
 (ii) $x = 42^\circ, y = 90^\circ$
 (iii) $x = 43^\circ, y = 91^\circ$
 (iv) $x = 44^\circ, y = 92^\circ$
 (v) $x = 46^\circ, y = 94^\circ$

35. Find the unknown marked angles in the following figure



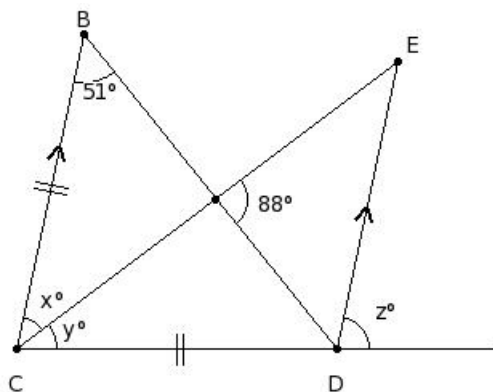
- (i) $x = 96^\circ$, $y = 121^\circ$
- (ii) $x = 97^\circ$, $y = 122^\circ$
- (iii) $x = 95^\circ$, $y = 120^\circ$
- (iv) $x = 94^\circ$, $y = 119^\circ$
- (v) $x = 93^\circ$, $y = 118^\circ$

36. In the given figure, it is given that $LK \parallel NM$, $\angle LNM = 57^\circ$ and $\angle LKJ = 93^\circ$. Find the value of x .



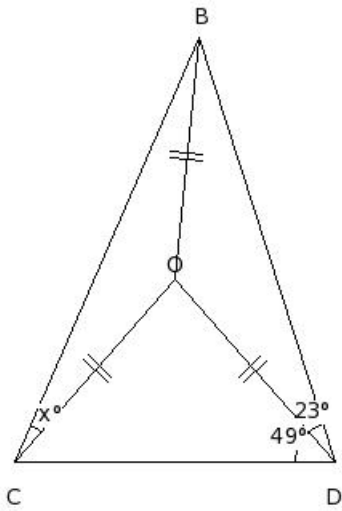
- (i) $x = 29^\circ$ (ii) $x = 31^\circ$ (iii) $x = 32^\circ$
- (iv) $x = 30^\circ$ (v) $x = 28^\circ$

37. In the given figure, find the values of x , y and z .



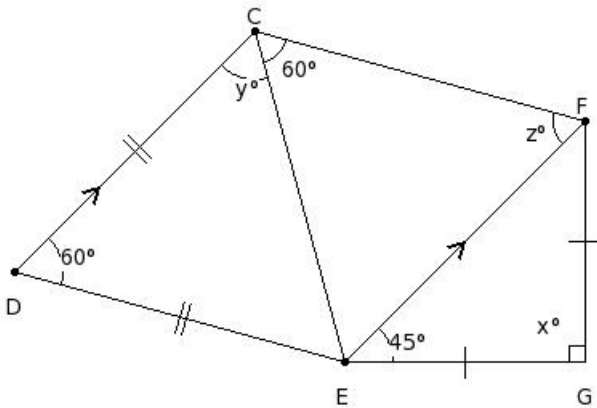
- (i) $x = 41^\circ$, $y = 35^\circ$, $z = 80^\circ$
- (ii) $x = 39^\circ$, $y = 37^\circ$, $z = 80^\circ$
- (iii) $x = 41^\circ$, $y = 37^\circ$, $z = 78^\circ$
- (iv) $x = 39^\circ$, $y = 39^\circ$, $z = 78^\circ$
- (v) $x = 43^\circ$, $y = 37^\circ$, $z = 76^\circ$

38. Find the value of x in the given figure.



- (i) $x = 15^\circ$ (ii) $x = 19^\circ$ (iii) $x = 16^\circ$
 (iv) $x = 17^\circ$ (v) $x = 18^\circ$

39. In the given figure, find the values of x , y and z .



- (i) $x = 90^\circ$, $y = 60^\circ$, $z = 60^\circ$
 (ii) $x = 92^\circ$, $y = 60^\circ$, $z = 58^\circ$
 (iii) $x = 90^\circ$, $y = 58^\circ$, $z = 62^\circ$
 (iv) $x = 88^\circ$, $y = 62^\circ$, $z = 60^\circ$
 (v) $x = 88^\circ$, $y = 60^\circ$, $z = 62^\circ$

Assignment Key

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