

EduSahara™ Learning Center Assignment

Grade : Class IX, CBSE

Chapter : Lines and Angles

Name : Triangle Angle Properties

1. Sum of the interior angles in a triangle is

- (i) 210° (ii) 185° (iii) 195° (iv) 180° (v) 190°

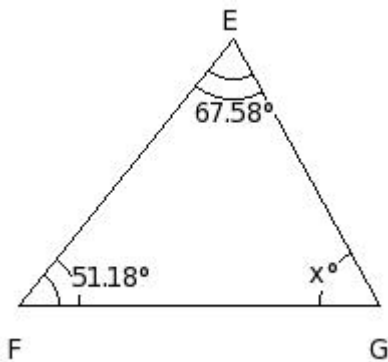
2. Two angles of a triangle measure 59° and 67° respectively. Find the measure of the third angle of the triangle

- (i) 52° (ii) 53° (iii) 54° (iv) 55° (v) 56°

3. The angles of a triangle ABC are in the ratio 4 : 3 : 8. Find the measure of each angle of the triangle

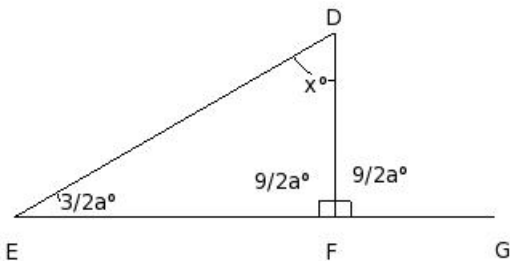
- (i) $A = 50^\circ$, $B = 36^\circ$, $C = 94^\circ$
 (ii) $A = 48^\circ$, $B = 36^\circ$, $C = 96^\circ$
 (iii) $A = 46^\circ$, $B = 36^\circ$, $C = 98^\circ$
 (iv) $A = 48^\circ$, $B = 34^\circ$, $C = 98^\circ$
 (v) $A = 46^\circ$, $B = 38^\circ$, $C = 96^\circ$

4. Find the unknown angle from the following figure



- (i) $x = 60.24^\circ$ (ii) $x = 61.24^\circ$ (iii) $x = 63.24^\circ$ (iv) $x = 59.24^\circ$ (v) $x = 62.24^\circ$

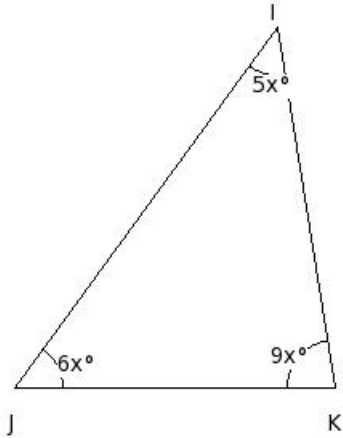
5. In the given figure, $\triangle DEF$ in which side EF has been produced to G. If $\angle FDE = x^\circ$, $\angle DEF = (3/2a)^\circ$, $\angle EFD = (9/2a)^\circ$ and $\angle DFG = (9/2a)^\circ$, find the values of a and x.



- (i) $a = 19^\circ$, $x = 59^\circ$
 (ii) $a = 20^\circ$, $x = 60^\circ$
 (iii) $a = 22^\circ$, $x = 62^\circ$
 (iv) $a = 18^\circ$, $x = 58^\circ$
 (v)

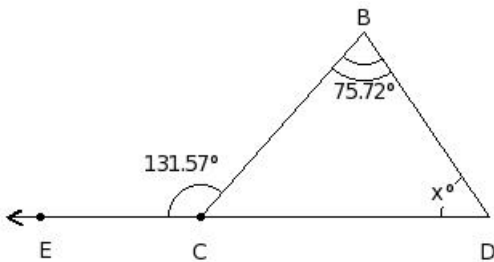
$$a = 21^\circ, x = 61^\circ$$

6. Find the angles of the triangle



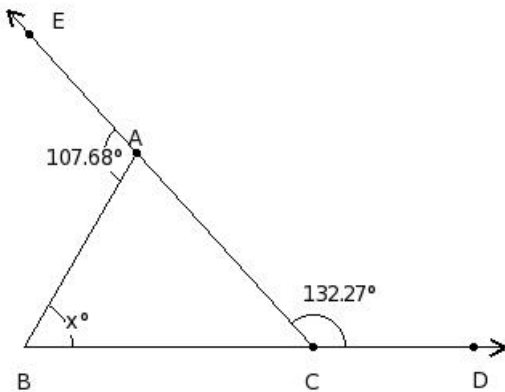
- (i) $I = 45^\circ, J = 52^\circ, K = 83^\circ$
- (ii) $I = 47^\circ, J = 54^\circ, K = 79^\circ$
- (iii) $I = 45^\circ, J = 54^\circ, K = 81^\circ$
- (iv) $I = 43^\circ, J = 56^\circ, K = 81^\circ$
- (v) $I = 43^\circ, J = 54^\circ, K = 83^\circ$

7. Calculate the value of x in the following figure



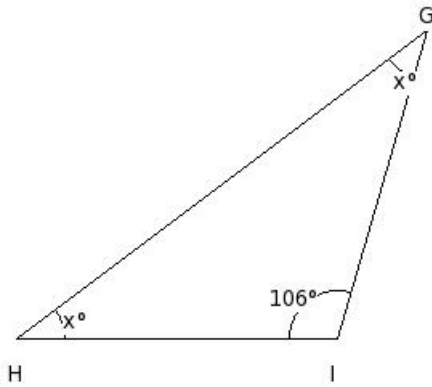
- (i) $x = 54.85^\circ$ (ii) $x = 55.85^\circ$ (iii) $x = 53.85^\circ$
- (iv) $x = 57.85^\circ$ (v) $x = 56.85^\circ$

8. Find the unknown marked angle in the following figure



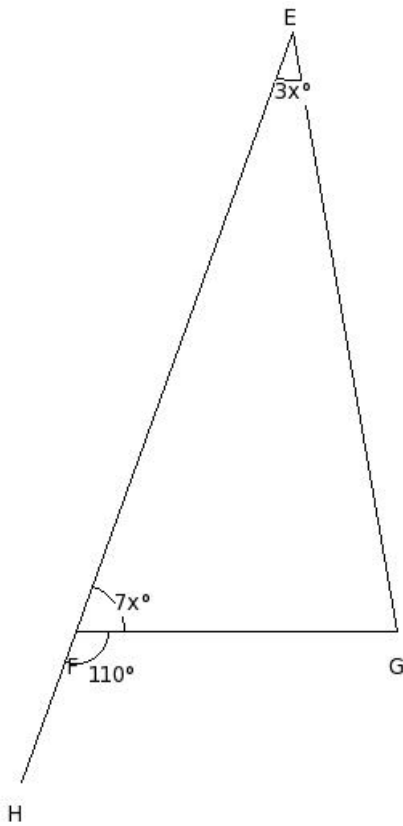
- (i) $x = 58.95^\circ$ (ii) $x = 57.95^\circ$ (iii) $x = 59.95^\circ$
- (iv) $x = 61.95^\circ$ (v) $x = 60.95^\circ$

9. Find the unknown angles in the following figure



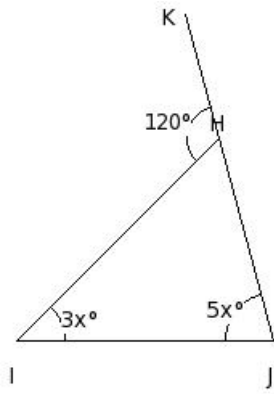
- (i) $G = 36^\circ$, $H = 36^\circ$
- (ii) $G = 37^\circ$, $H = 37^\circ$
- (iii) $G = 39^\circ$, $H = 39^\circ$
- (iv) $G = 35^\circ$, $H = 35^\circ$
- (v) $G = 38^\circ$, $H = 38^\circ$

10. In the following figure, one side of a triangle has been produced. Find all the angles of the triangle



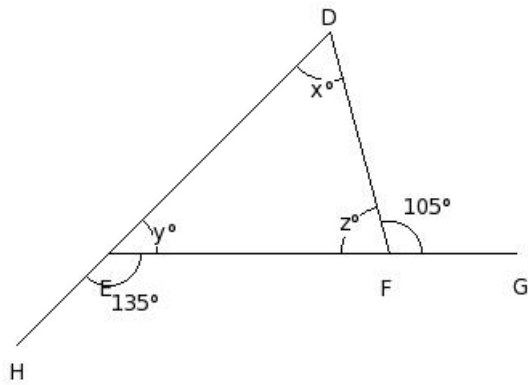
- (i) $E = 30^\circ$, $F = 70^\circ$, $G = 80^\circ$
- (ii) $E = 28^\circ$, $F = 72^\circ$, $G = 80^\circ$
- (iii) $E = 30^\circ$, $F = 68^\circ$, $G = 82^\circ$
- (iv) $E = 32^\circ$, $F = 70^\circ$, $G = 78^\circ$
- (v) $E = 28^\circ$, $F = 70^\circ$, $G = 82^\circ$

11. In the following figure, one side of a triangle has been produced. Find all the angles of the triangle.



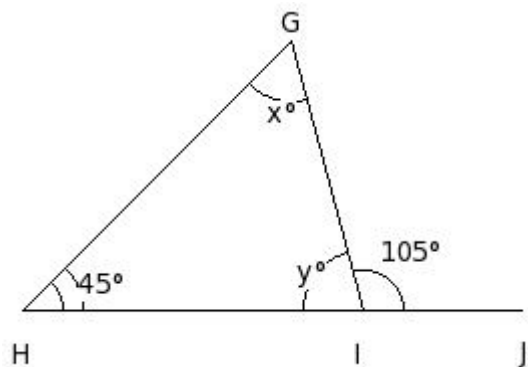
- (i) $H = 60^\circ, I = 45^\circ, J = 75^\circ$
- (ii) $H = 58^\circ, I = 45^\circ, J = 77^\circ$
- (iii) $H = 60^\circ, I = 43^\circ, J = 77^\circ$
- (iv) $H = 62^\circ, I = 45^\circ, J = 73^\circ$
- (v) $H = 58^\circ, I = 47^\circ, J = 75^\circ$

12. In the following figure, two sides of a triangle have been produced. Find all the angles of the triangle.



- (i) $x = 58^\circ, y = 45^\circ, z = 77^\circ$
- (ii) $x = 62^\circ, y = 45^\circ, z = 73^\circ$
- (iii) $x = 58^\circ, y = 47^\circ, z = 75^\circ$
- (iv) $x = 60^\circ, y = 43^\circ, z = 77^\circ$
- (v) $x = 60^\circ, y = 45^\circ, z = 75^\circ$

13. In the following figure, one side of a triangle has been produced. Find the values of x and y .



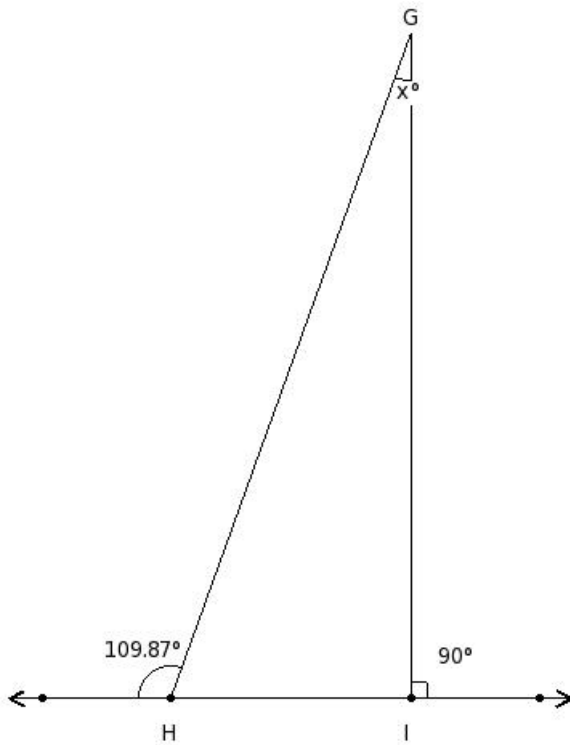
- (i) $x = 58^\circ, y = 73^\circ$
- (ii) $x = 61^\circ, y = 76^\circ$

(iii) $x = 60^\circ$, $y = 75^\circ$

(iv) $x = 59^\circ$, $y = 74^\circ$

(v) $x = 62^\circ$, $y = 77^\circ$

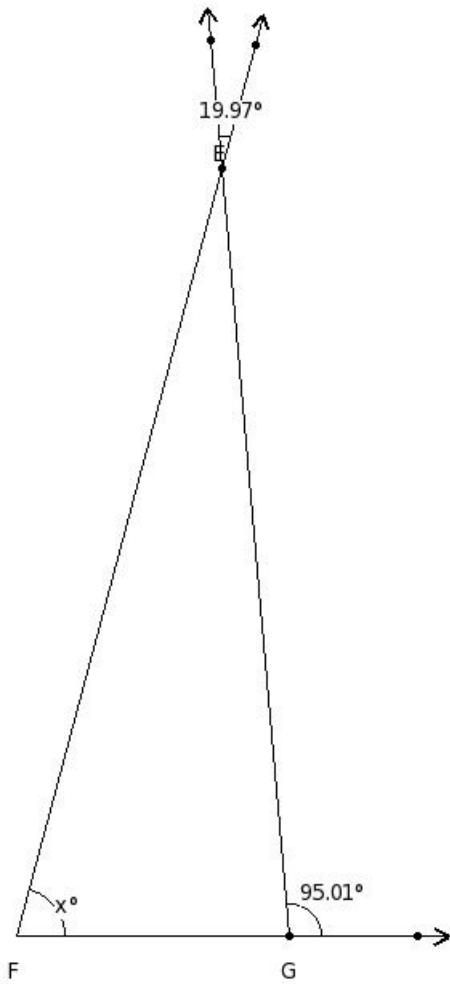
14. Calculate the value of the lettered angle in the following figure



(i) $x = 17.87^\circ$ (ii) $x = 21.87^\circ$ (iii) $x = 18.87^\circ$

(iv) $x = 20.87^\circ$ (v) $x = 19.87^\circ$

15. Calculate the value of the lettered angle in the following figure



- (i) $x = 77.04^\circ$ (ii) $x = 76.04^\circ$ (iii) $x = 75.04^\circ$
 (iv) $x = 74.04^\circ$ (v) $x = 73.04^\circ$

16. In $\triangle CDE$, if $\angle C = 57^\circ$ and $\angle D = 56^\circ$, find the measure of $\angle E$

- (i) $E = 66^\circ$ (ii) $E = 68^\circ$ (iii) $E = 69^\circ$ (iv) $E = 67^\circ$ (v) $E = 65^\circ$

17. In $\triangle HIJ$, if $\angle H = 40^\circ$ and $\angle I = \angle J$, find the measure of each of the equal angles of the triangle

- (i) 71° (ii) 69° (iii) 72° (iv) 70° (v) 68°

18. One angle of a triangle measures 60° and the other two angles are in the ratio 11 : 13. Find these angles.

- (i) $B = 54^\circ$, $C = 64^\circ$
 (ii) $B = 57^\circ$, $C = 67^\circ$
 (iii) $B = 56^\circ$, $C = 66^\circ$
 (iv) $B = 53^\circ$, $C = 63^\circ$
 (v) $B = 55^\circ$, $C = 65^\circ$

19. In a right-angled triangle, the two acute angles are in the ratio 11 : 7. Find these angles.

- (i) $A = 55^\circ$, $C = 35^\circ$
 (ii) $A = 53^\circ$, $C = 33^\circ$
 (iii) $A = 57^\circ$, $C = 37^\circ$
 (iv) $A = 56^\circ$, $C = 36^\circ$

(v) $A = 54^\circ$, $C = 34^\circ$

20. One of the two equal angles of an isosceles triangle measures 48° . Find the measure of each angle of the triangle.

(i) $A = 48^\circ$, $B = 46^\circ$, $C = 86^\circ$

(ii) $A = 50^\circ$, $B = 48^\circ$, $C = 82^\circ$

(iii) $A = 46^\circ$, $B = 50^\circ$, $C = 84^\circ$

(iv) $A = 48^\circ$, $B = 48^\circ$, $C = 84^\circ$

(v) $A = 46^\circ$, $B = 48^\circ$, $C = 86^\circ$

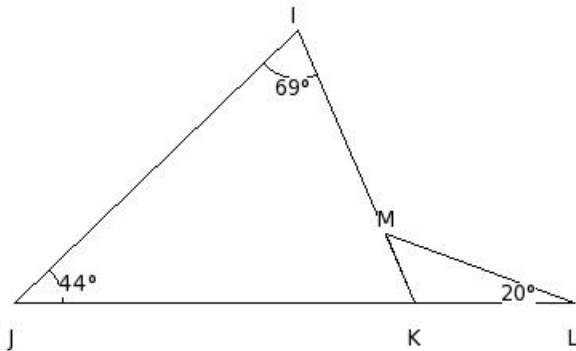
21. If all the three angles of a triangle are of the same measure, find the measure of each of the angles.

(i) 61° (ii) 60° (iii) 59° (iv) 58° (v) 62°

22. In a right-angled triangle if one of the acute angles is 47° , find the measure of the other acute angle.

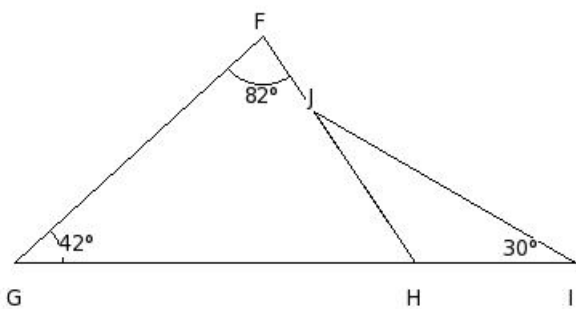
(i) 42° (ii) 45° (iii) 41° (iv) 43° (v) 44°

23. In the given figure, find $\angle JKI$



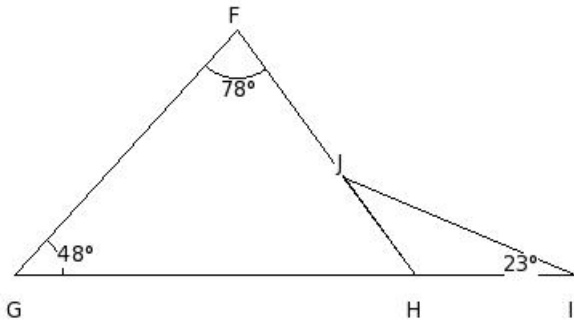
(i) 67° (ii) 66° (iii) 68° (iv) 65° (v) 69°

24. In the given figure, find $\angle JHI$



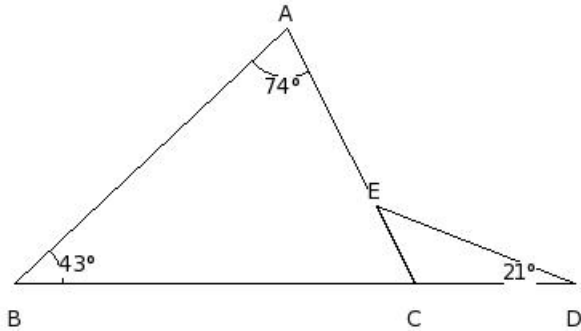
(i) 124° (ii) 126° (iii) 122° (iv) 125° (v) 123°

25. In the given figure, find $\angle IJH$



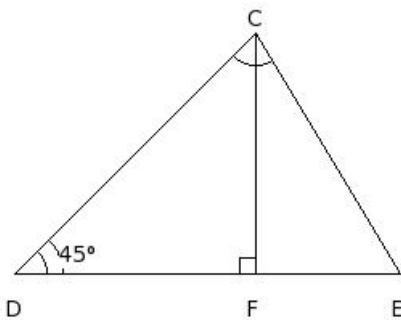
- (i) 30° (ii) 29° (iii) 31° (iv) 33° (v) 32°

26. In the given figure, find $\angle AED$



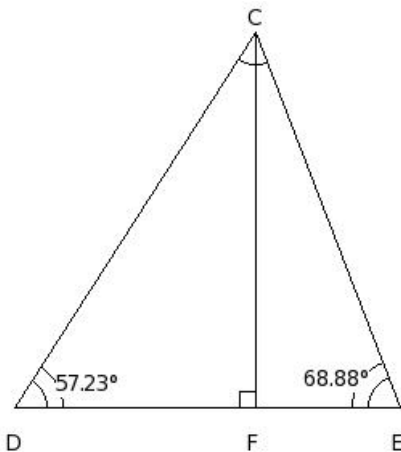
- (i) 140° (ii) 139° (iii) 136° (iv) 137° (v) 138°

27. In the given figure, if $FC \perp DE$ and $\angle CDF = 45^\circ$, find $\angle FCD$



- (i) 43.00° (ii) 46.00° (iii) 45.00° (iv) 47.00° (v) 44.00°

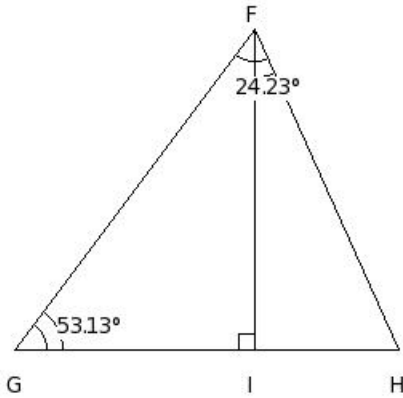
28. In the given figure, if $FC \perp DE$ and $\angle CDF = 57.23^\circ$, find $\angle ECF$



- (i) 19.12° (ii) 20.12° (iii) 22.12° (iv) 23.12° (v) 21.12°

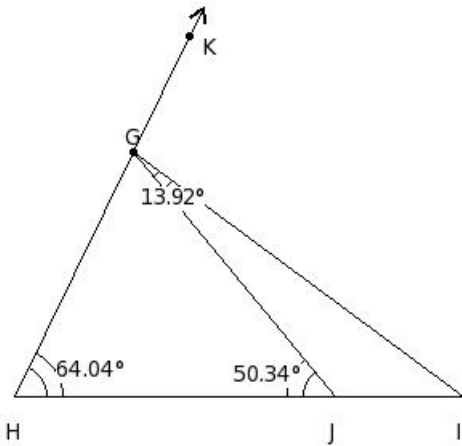
29.

In the given figure , if $IF \perp GH$ and $\angle FGI = 53.13^\circ$, find $\angle IHF$



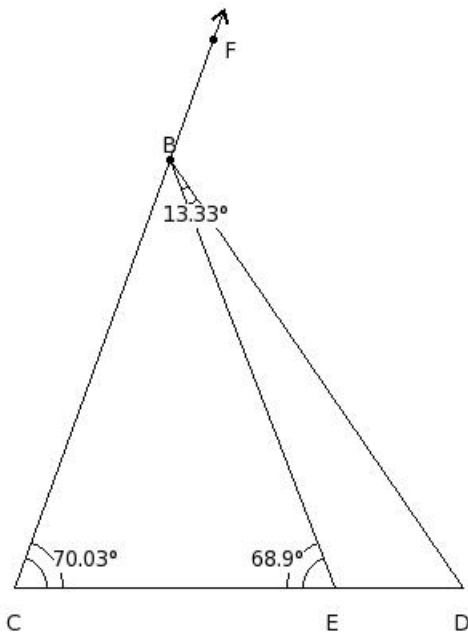
- (i) 66.77° (ii) 63.77° (iii) 64.77° (iv) 67.77° (v) 65.77°

30. In below given figure, find $\angle GJI$



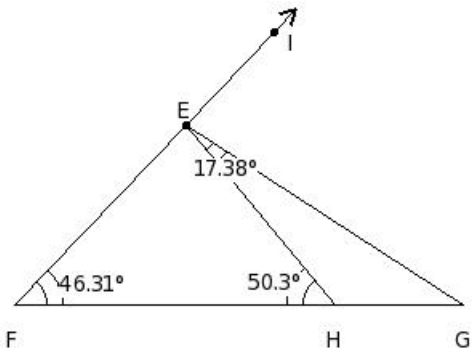
- (i) 127.66° (ii) 129.66° (iii) 130.66° (iv) 131.66° (v) 128.66°

31. In below given figure, find $\angle EBC$



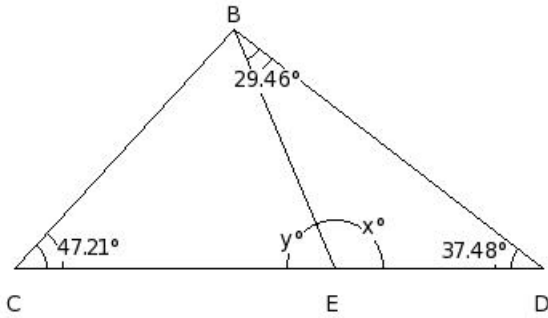
- (i) 40.07° (ii) 39.07° (iii) 42.07° (iv) 41.07° (v) 43.07°

32. In below given figure, find $\angle GEI$



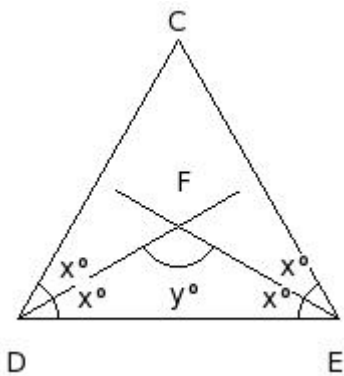
- (i) 78.23° (ii) 77.23° (iii) 81.23° (iv) 79.23° (v) 80.23°

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



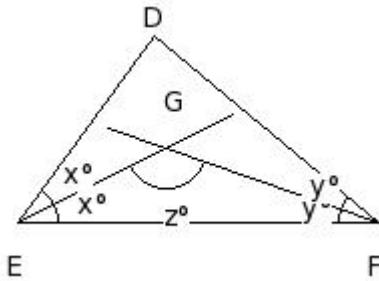
- (i) $x = 114.06^\circ$, $y = 67.94^\circ$
 (ii) $x = 112.06^\circ$, $y = 65.94^\circ$
 (iii) $x = 113.06^\circ$, $y = 66.94^\circ$
 (iv) $x = 115.06^\circ$, $y = 68.94^\circ$
 (v) $x = 111.06^\circ$, $y = 64.94^\circ$

34. In the given figure, $\triangle CDE$ is a triangle in which $\angle C = \angle D = \angle E$.
 This bisectors of $\angle D$ and $\angle E$ intersect at F . Find $\angle F$ =



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

35. In the given figure, $\triangle DEF$ is a triangle in which $\angle E = 53.83^\circ$ and $\angle F = 39.71^\circ$.
 If 'z' is the angle between the bisector of $\angle E$ and $\angle F$, then find z .

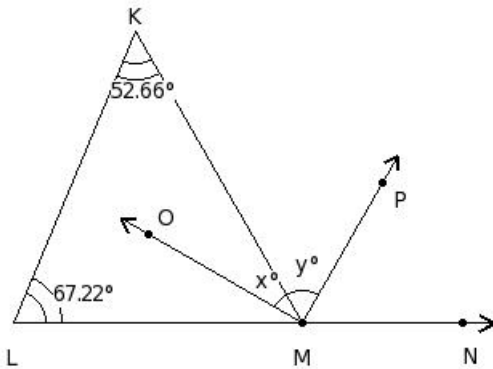


- (i) 135.23° (ii) 132.23° (iii) 134.23° (iv) 131.23° (v) 133.23°

In the given figure, $\angle K = 52.66^\circ$ and $\angle L = 67.22^\circ$.

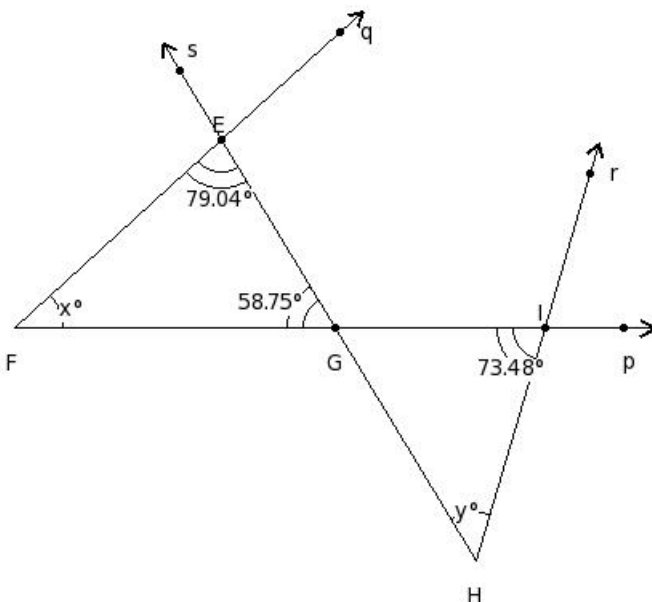
36. Side LM is produced to N, so that $\angle LMK$ and $\angle KMN$ form a linear pair.

If $\vec{MO}$ and $\vec{MP}$ are the bisectors of $\angle LMK$ and $\angle KMN$, find x and y .



- (i) $x = 29.06^\circ$, $y = 58.94^\circ$
 (ii) $x = 31.06^\circ$, $y = 60.94^\circ$
 (iii) $x = 30.06^\circ$, $y = 59.94^\circ$
 (iv) $x = 28.06^\circ$, $y = 57.94^\circ$
 (v) $x = 32.06^\circ$, $y = 61.94^\circ$

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



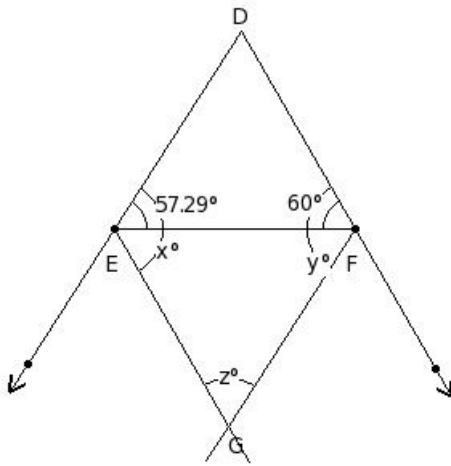
- (i) $x = 44.21^\circ$, $y = 49.77^\circ$
 (ii) $x = 41.21^\circ$, $y = 46.77^\circ$

(iii) $x = 42.21^\circ$, $y = 47.77^\circ$

(iv) $x = 43.21^\circ$, $y = 48.77^\circ$

(v) $x = 40.21^\circ$, $y = 45.77^\circ$

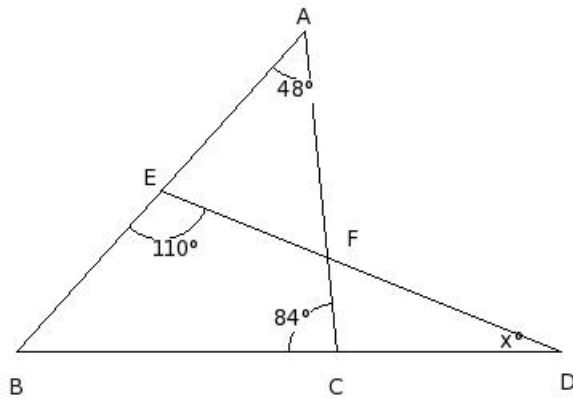
38. In the given figure, $\triangle DEF$ in which $\angle E = 57.29^\circ$ and $\angle F = 60^\circ$. DG and EF bisect each other. Find the value of z



(i) $z = 62.71^\circ$ (ii) $z = 61.71^\circ$ (iii) $z = 63.71^\circ$

(iv) $z = 60.71^\circ$ (v) $z = 64.71^\circ$

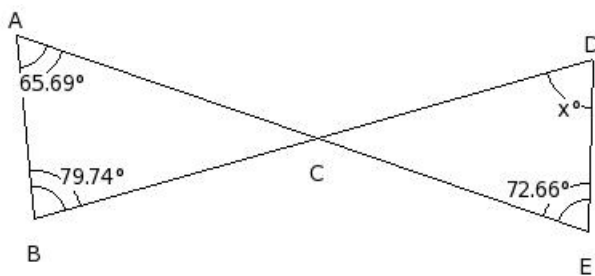
39. In the given figure, calculate the value of x.



(i) $x = 21^\circ$ (ii) $x = 20^\circ$ (iii) $x = 22^\circ$

(iv) $x = 23^\circ$ (v) $x = 24^\circ$

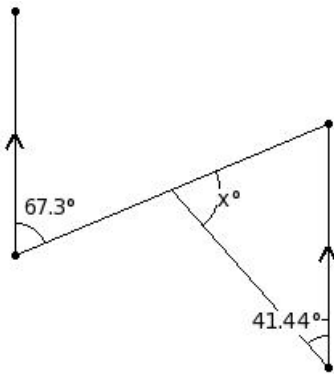
40. In the given figure, calculate the value of x.



(i) $x = 71.77^\circ$ (ii) $x = 74.77^\circ$ (iii) $x = 72.77^\circ$

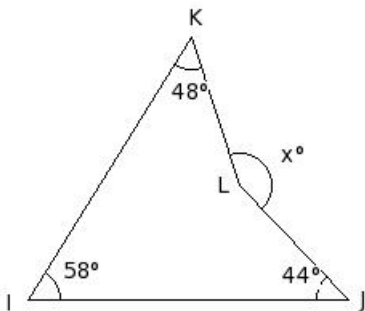
(iv) $x = 73.77^\circ$ (v) $x = 70.77^\circ$

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



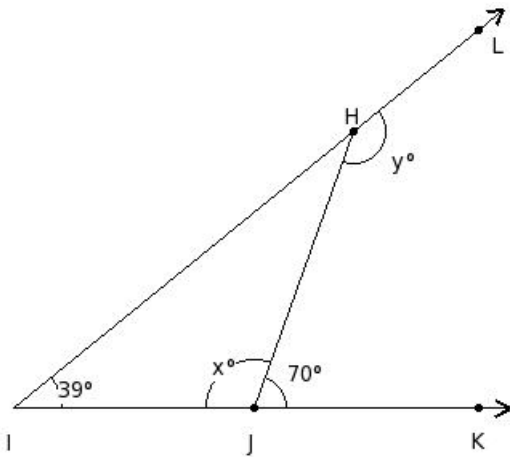
- (i) $x = 70.26^\circ$ (ii) $x = 72.26^\circ$ (iii) $x = 71.26^\circ$
 (iv) $x = 73.26^\circ$ (v) $x = 69.26^\circ$

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



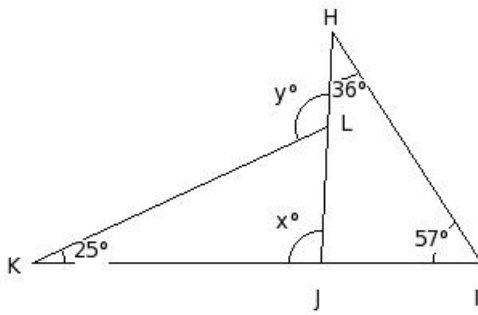
- (i) $x = 148^\circ$ (ii) $x = 151^\circ$ (iii) $x = 150^\circ$
 (iv) $x = 152^\circ$ (v) $x = 149^\circ$

43. Find the unknown marked angles in the following figure



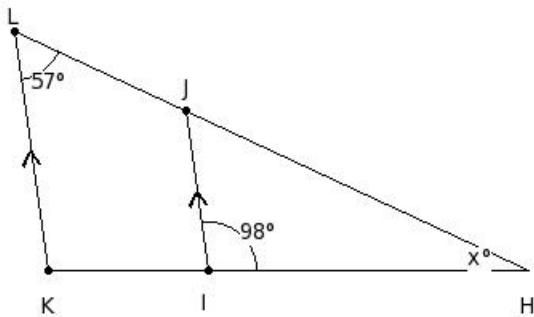
- (i) $x = 108^\circ, y = 147^\circ$
 (ii) $x = 110^\circ, y = 149^\circ$
 (iii) $x = 109^\circ, y = 148^\circ$
 (iv) $x = 112^\circ, y = 151^\circ$
 (v) $x = 111^\circ, y = 150^\circ$

44. Find the unknown marked angles in the following figure



- (i) $x = 94^\circ$, $y = 119^\circ$
- (ii) $x = 93^\circ$, $y = 118^\circ$
- (iii) $x = 95^\circ$, $y = 120^\circ$
- (iv) $x = 91^\circ$, $y = 116^\circ$
- (v) $x = 92^\circ$, $y = 117^\circ$

45. In the given figure, it is given that $JI \parallel LK$, $\angle JLK = 57^\circ$ and $\angle JIH = 98^\circ$. Find the value of x .



- (i) $x = 23^\circ$ (ii) $x = 25^\circ$ (iii) $x = 27^\circ$
- (iv) $x = 24^\circ$ (v) $x = 26^\circ$

Assignment Key

- 1) (iv)
- 2) (iii)
- 3) (ii)
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- 6) (iii)
- 7) (ii)
- 8) (iii)
- 9) (ii)
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- 11) (i)
- 12) (v)
- 13) (iii)
- 14) (v)
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