

EduSahara™ Learning Center Assignment**Grade : Class VII, ICSE****Chapter : Triangles****Name : Triangle Angle Properties****Licensed To : Teachers and Students for non-commercial use**

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1. Two angles of a triangle measure 58° and 51° respectively. Find the measure of the third angle of the triangle

(i) 72° (ii) 70° (iii) 73° (iv) 71° (v) 69°

2. The angles of a triangle ABC are in the ratio 18 : 13 : 29. Find the measure of each angle of the triangle

(i) $A = 54^\circ$, $B = 39^\circ$, $C = 87^\circ$

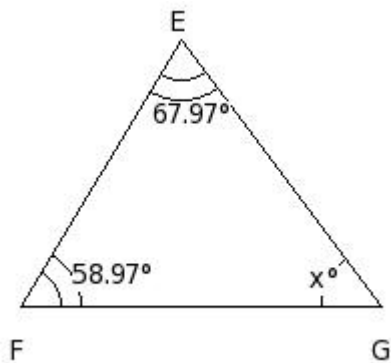
(ii) $A = 56^\circ$, $B = 39^\circ$, $C = 85^\circ$

(iii) $A = 52^\circ$, $B = 41^\circ$, $C = 87^\circ$

(iv) $A = 54^\circ$, $B = 37^\circ$, $C = 89^\circ$

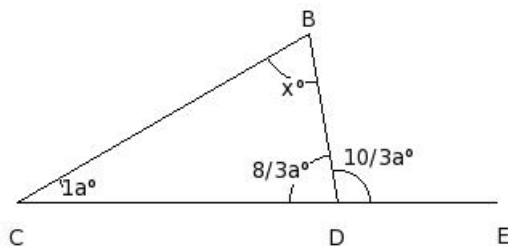
(v) $A = 52^\circ$, $B = 39^\circ$, $C = 89^\circ$

3. Find the unknown angle from the following figure



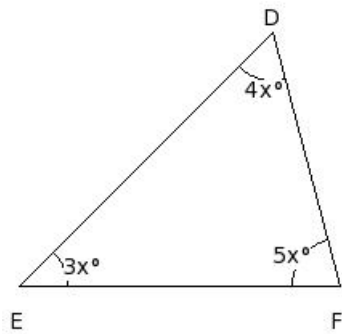
(i) $x = 53.06^\circ$ (ii) $x = 55.06^\circ$ (iii) $x = 51.06^\circ$ (iv) $x = 52.06^\circ$ (v) $x = 54.06^\circ$

4. In the given figure, $\triangle BCD$ in which side CD has been produced to E. If $\angle DBC = x^\circ$, $\angle BCD = (1a)^\circ$, $\angle CDB = (8/3a)^\circ$ and $\angle BDE = (10/3a)^\circ$, find the values of a and x.



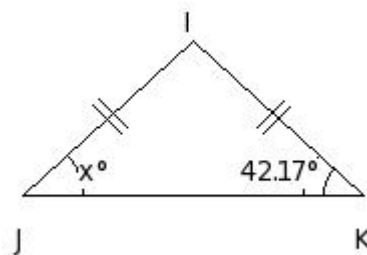
- (i) $a = 30^\circ, x = 70^\circ$
- (ii) $a = 29^\circ, x = 69^\circ$
- (iii) $a = 31^\circ, x = 71^\circ$
- (iv) $a = 32^\circ, x = 72^\circ$
- (v) $a = 28^\circ, x = 68^\circ$

5. Find the angles of the triangle



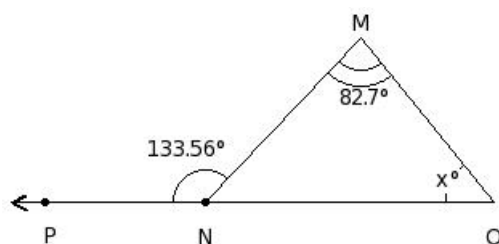
- (i) $D = 58^\circ, E = 47^\circ, F = 75^\circ$
- (ii) $D = 62^\circ, E = 45^\circ, F = 73^\circ$
- (iii) $D = 58^\circ, E = 45^\circ, F = 77^\circ$
- (iv) $D = 60^\circ, E = 45^\circ, F = 75^\circ$
- (v) $D = 60^\circ, E = 43^\circ, F = 77^\circ$

6. Calculate the value of x in the following figure



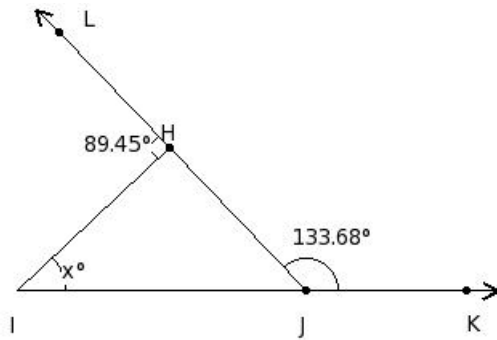
- (i) $x = 41.17^\circ$ (ii) $x = 40.17^\circ$ (iii) $x = 43.17^\circ$
- (iv) $x = 44.17^\circ$ (v) $x = 42.17^\circ$

7. Calculate the value of x in the following figure



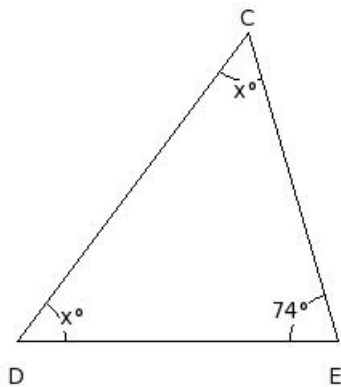
- (i) $x = 50.86^\circ$ (ii) $x = 49.86^\circ$ (iii) $x = 51.86^\circ$
 (iv) $x = 52.86^\circ$ (v) $x = 48.86^\circ$

8. Find the unknown marked angle in the following figure



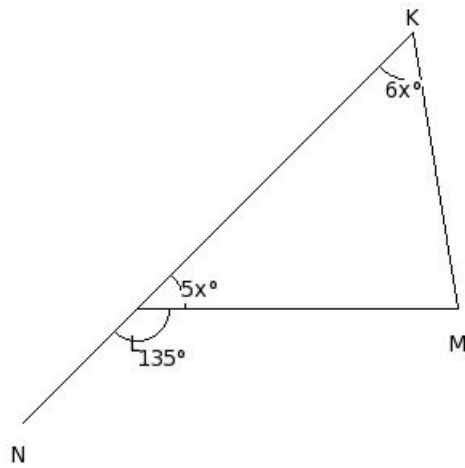
- (i) $x = 43.13^\circ$ (ii) $x = 44.13^\circ$ (iii) $x = 45.13^\circ$
 (iv) $x = 42.13^\circ$ (v) $x = 41.13^\circ$

9. Find the unknown angles in the following figure



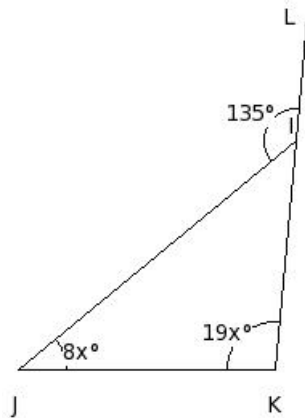
- (i) $C = 55^\circ, D = 55^\circ$
 (ii) $C = 51^\circ, D = 51^\circ$
 (iii) $C = 54^\circ, D = 54^\circ$
 (iv) $C = 53^\circ, D = 53^\circ$
 (v) $C = 52^\circ, D = 52^\circ$

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



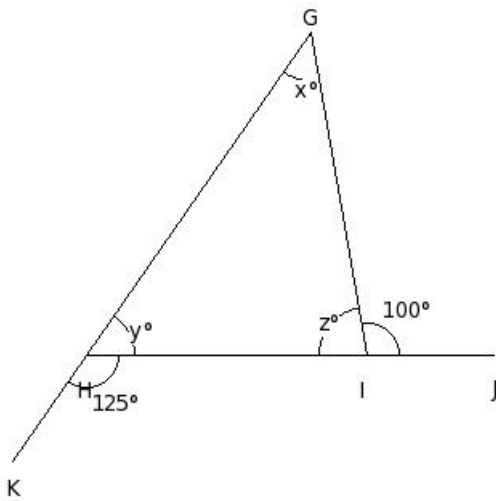
- (i) $K = 52^\circ, L = 47^\circ, M = 81^\circ$
- (ii) $K = 56^\circ, L = 45^\circ, M = 79^\circ$
- (iii) $K = 54^\circ, L = 43^\circ, M = 83^\circ$
- (iv) $K = 54^\circ, L = 45^\circ, M = 81^\circ$
- (v) $K = 52^\circ, L = 45^\circ, M = 83^\circ$

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



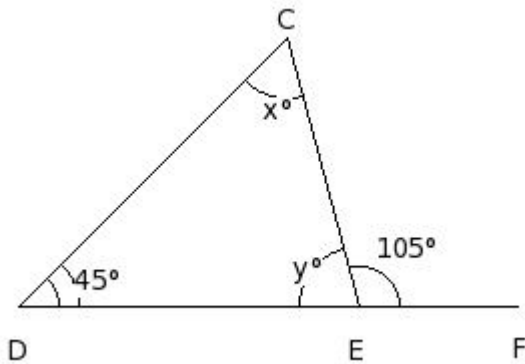
- (i) $L = 43^\circ, J = 42^\circ, K = 95^\circ$
- (ii) $L = 45^\circ, J = 38^\circ, K = 97^\circ$
- (iii) $L = 47^\circ, J = 40^\circ, K = 93^\circ$
- (iv) $L = 43^\circ, J = 40^\circ, K = 97^\circ$
- (v) $L = 45^\circ, J = 40^\circ, K = 95^\circ$

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



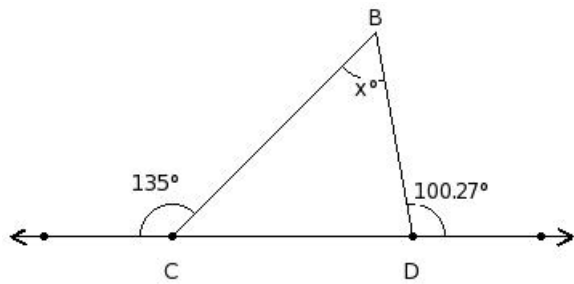
- (i) $x = 47^\circ, y = 55^\circ, z = 78^\circ$
- (ii) $x = 43^\circ, y = 55^\circ, z = 82^\circ$
- (iii) $x = 45^\circ, y = 53^\circ, z = 82^\circ$
- (iv) $x = 43^\circ, y = 57^\circ, z = 80^\circ$
- (v) $x = 45^\circ, y = 55^\circ, z = 80^\circ$

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



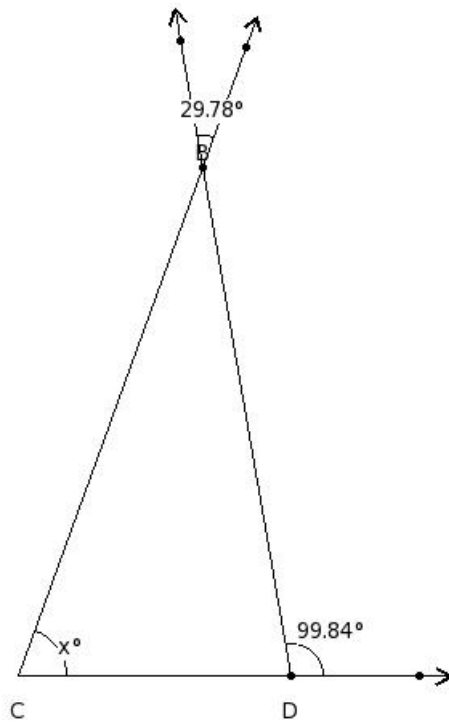
- (i) $x = 58^\circ, y = 73^\circ$
- (ii) $x = 60^\circ, y = 75^\circ$
- (iii) $x = 62^\circ, y = 77^\circ$
- (iv) $x = 59^\circ, y = 74^\circ$
- (v) $x = 61^\circ, y = 76^\circ$

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



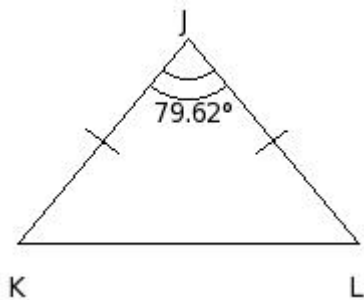
- (i) $x = 54.27^\circ$ (ii) $x = 53.27^\circ$ (iii) $x = 55.27^\circ$
 (iv) $x = 57.27^\circ$ (v) $x = 56.27^\circ$

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



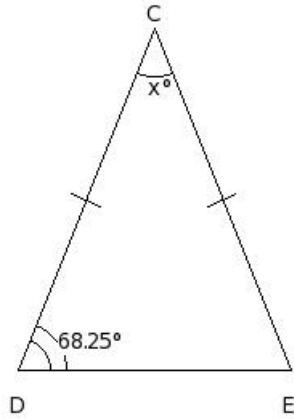
- (i) $x = 70.06^\circ$ (ii) $x = 71.06^\circ$ (iii) $x = 68.06^\circ$
 (iv) $x = 72.06^\circ$ (v) $x = 69.06^\circ$

16. In the given triangle, $\angle J = 79.62^\circ$. Find the measure of $\angle K$ and $\angle L$



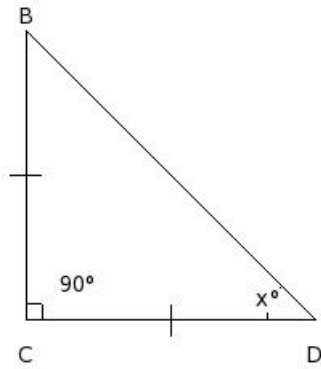
- (i) $\angle K = \angle L = 51.19^\circ$
 - (ii) $\angle K = \angle L = 48.19^\circ$
 - (iii) $\angle K = \angle L = 52.19^\circ$
 - (iv) $\angle K = \angle L = 50.19^\circ$
 - (v) $\angle K = \angle L = 49.19^\circ$
-

17. Find the unknown angle in the following figure



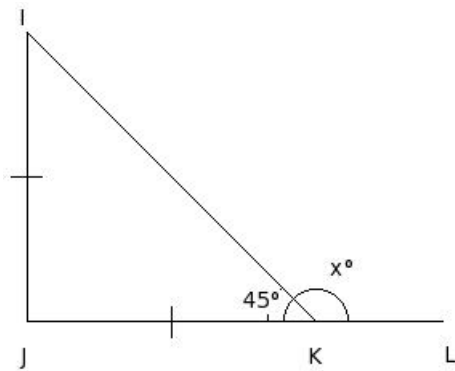
- (i) $x = 42.5^\circ$ (ii) $x = 44.5^\circ$ (iii) $x = 43.5^\circ$
 - (iv) $x = 41.5^\circ$ (v) $x = 45.5^\circ$
-

18. Find the unknown angle in the following figure



- (i) $x = 45^\circ$ (ii) $x = 46^\circ$ (iii) $x = 43^\circ$
 - (iv) $x = 47^\circ$ (v) $x = 44^\circ$
-

19. Find the unknown angle in the following figure



- (i) $x = 136^\circ$ (ii) $x = 134^\circ$ (iii) $x = 133^\circ$
 (iv) $x = 137^\circ$ (v) $x = 135^\circ$

20. In $\triangle CDE$, if $\angle C = 62^\circ$ and $\angle D = 57^\circ$, find the measure of $\angle E$

- (i) $E = 60^\circ$ (ii) $E = 62^\circ$ (iii) $E = 59^\circ$ (iv) $E = 61^\circ$ (v) $E = 63^\circ$

21. In $\triangle JKL$, if $\angle J = 70^\circ$ and $\angle K = \angle L$, find the measure of each of the equal angles of the triangle

- (i) 55° (ii) 56° (iii) 53° (iv) 54° (v) 57°

22. One angle of a triangle measures 60° and the other two angles are in the ratio 3 : 5. Find these angles.

- (i) $B = 45^\circ, C = 75^\circ$
 (ii) $B = 46^\circ, C = 76^\circ$
 (iii) $B = 44^\circ, C = 74^\circ$
 (iv) $B = 43^\circ, C = 73^\circ$
 (v) $B = 47^\circ, C = 77^\circ$

23. In a right-angled triangle, the two acute angles are in the ratio 13 : 5. Find these angles.

- (i) $A = 64^\circ, C = 24^\circ$
 (ii) $A = 66^\circ, C = 26^\circ$
 (iii) $A = 63^\circ, C = 23^\circ$
 (iv) $A = 65^\circ, C = 25^\circ$
 (v) $A = 67^\circ, C = 27^\circ$

24. One of the two equal angles of an isosceles triangle measures 74° . Find the measure of each angle of the triangle.

- (i) $A = 76^\circ, B = 74^\circ, C = 30^\circ$
 (ii) $A = 74^\circ, B = 74^\circ, C = 32^\circ$

(iii) $A = 72^\circ, B = 74^\circ, C = 34^\circ$

(iv) $A = 72^\circ, B = 76^\circ, C = 32^\circ$

(v) $A = 74^\circ, B = 72^\circ, C = 34^\circ$

25. Find the measure of each of the two equal angles of an isosceles right-angled triangle.

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

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

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

27. In a right-angled triangle if one of the acute angles is 56° , find the measure of the other acute angle.

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

28. The vertical angle of an isosceles triangle is twice the sum of its base angles. Find each angle of the triangle.

(i) $A = 118^\circ, B = 32^\circ, C = 30^\circ$

(ii) $A = 122^\circ, B = 30^\circ, C = 28^\circ$

(iii) $A = 118^\circ, B = 30^\circ, C = 32^\circ$

(iv) $A = 120^\circ, B = 28^\circ, C = 32^\circ$

(v) $A = 120^\circ, B = 30^\circ, C = 30^\circ$

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

(i) $A = 22^\circ, B = 80^\circ, C = 78^\circ$

(ii) $A = 18^\circ, B = 80^\circ, C = 82^\circ$

(iii) $A = 18^\circ, B = 82^\circ, C = 80^\circ$

(iv) $A = 20^\circ, B = 80^\circ, C = 80^\circ$

(v) $A = 20^\circ, B = 78^\circ, C = 82^\circ$

30. The ratio between the base angle and the vertical angle of an isosceles triangle is 7 : 4. Find each angle of the triangle

(i) $A = 38^\circ, B = 72^\circ, C = 70^\circ$

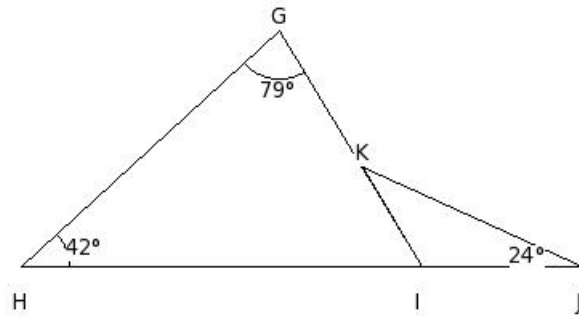
(ii) $A = 40^\circ, B = 70^\circ, C = 70^\circ$

(iii) $A = 38^\circ, B = 70^\circ, C = 72^\circ$

(iv) $A = 40^\circ, B = 68^\circ, C = 72^\circ$

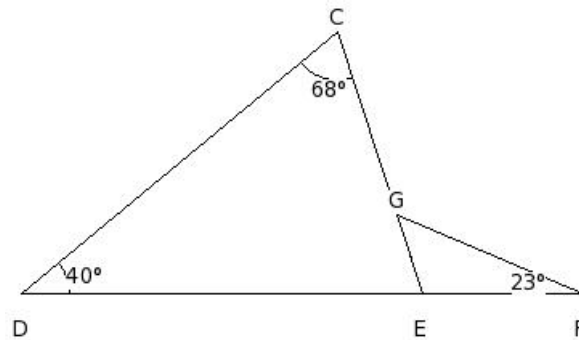
(v) $A = 42^\circ$, $B = 70^\circ$, $C = 68^\circ$

31. In the given figure, find $\angle HIG$



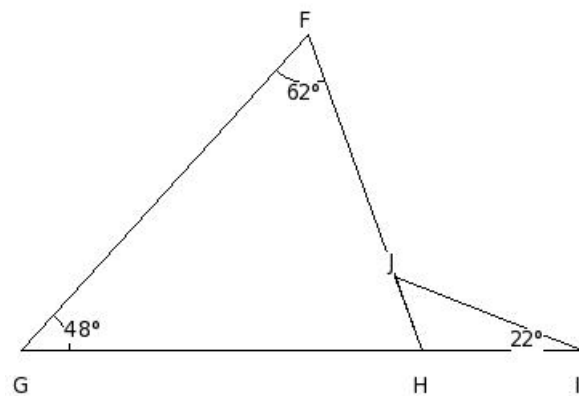
(i) 61° (ii) 58° (iii) 57° (iv) 60° (v) 59°

32. In the given figure, find $\angle GEF$



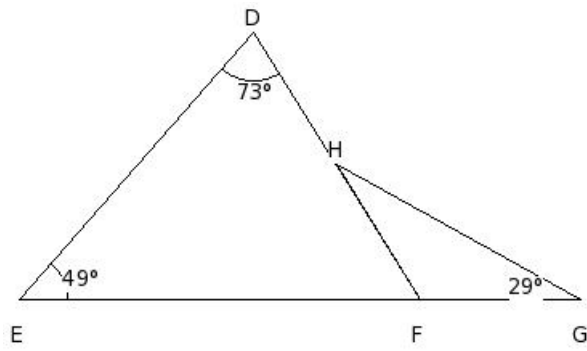
(i) 108° (ii) 107° (iii) 109° (iv) 110° (v) 106°

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



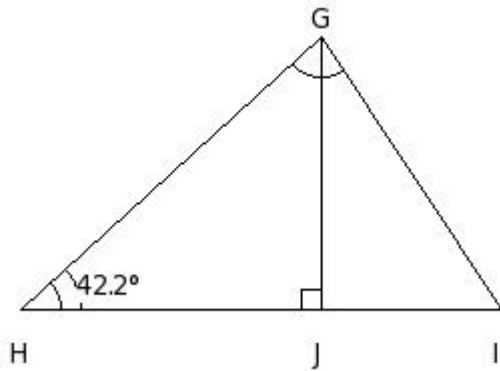
(i) 48° (ii) 47° (iii) 49° (iv) 46° (v) 50°

34. In the given figure, find $\angle DHG$



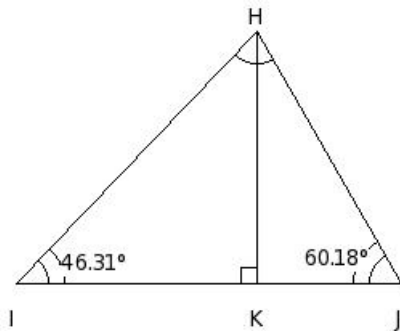
- (i) 152° (ii) 151° (iii) 150° (iv) 153° (v) 149°

35. In the given figure , if $JG \perp HI$ and $\angle GHJ = 42.2^\circ$, find $\angle JGH$



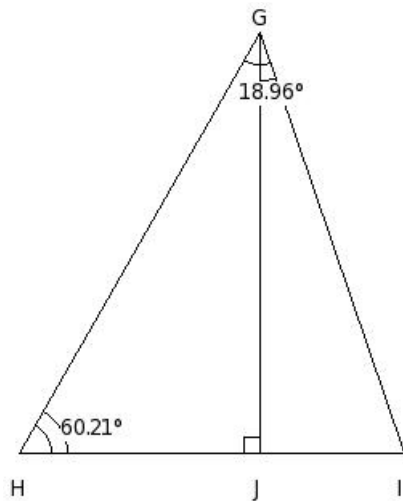
- (i) 46.80° (ii) 48.80° (iii) 49.80° (iv) 47.80° (v) 45.80°

36. In the given figure , if $KH \perp IJ$ and $\angle HIK = 46.31^\circ$, find $\angle JHK$



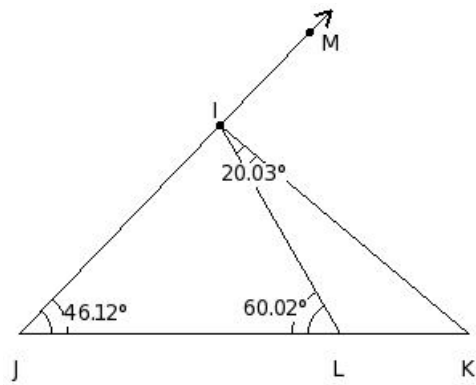
- (i) 28.82° (ii) 31.82° (iii) 27.82° (iv) 29.82° (v) 30.82°

37. In the given figure , if $JG \perp HI$ and $\angle GHJ = 60.21^\circ$, find $\angle JIG$



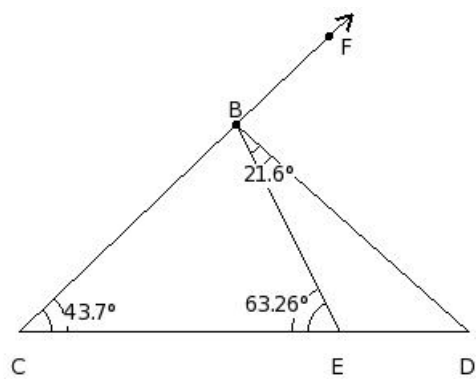
- (i) 72.04° (ii) 73.04° (iii) 70.04° (iv) 69.04° (v) 71.04°

38. In below given figure, find $\angle ILK$



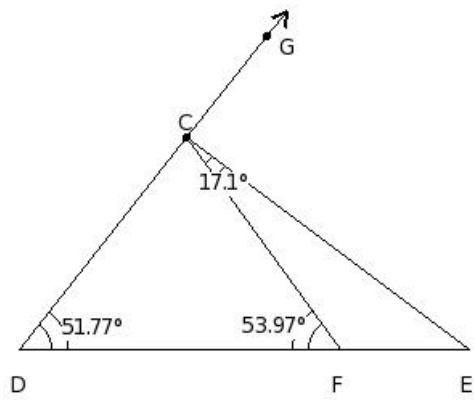
- (i) 117.98° (ii) 121.98° (iii) 118.98° (iv) 119.98° (v) 120.98°

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



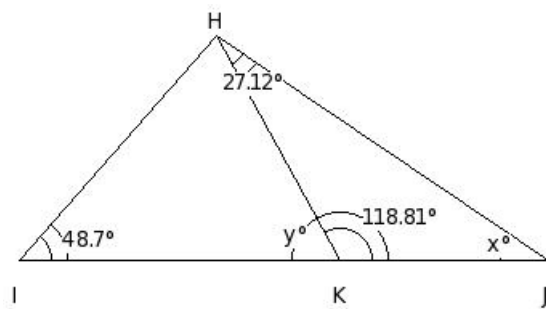
- (i) 72.04° (ii) 73.04° (iii) 75.04° (iv) 74.04° (v) 71.04°

40. In below given figure, find $\angle ECG$



- (i) 90.64° (ii) 88.64° (iii) 89.64° (iv) 86.64° (v) 87.64°

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

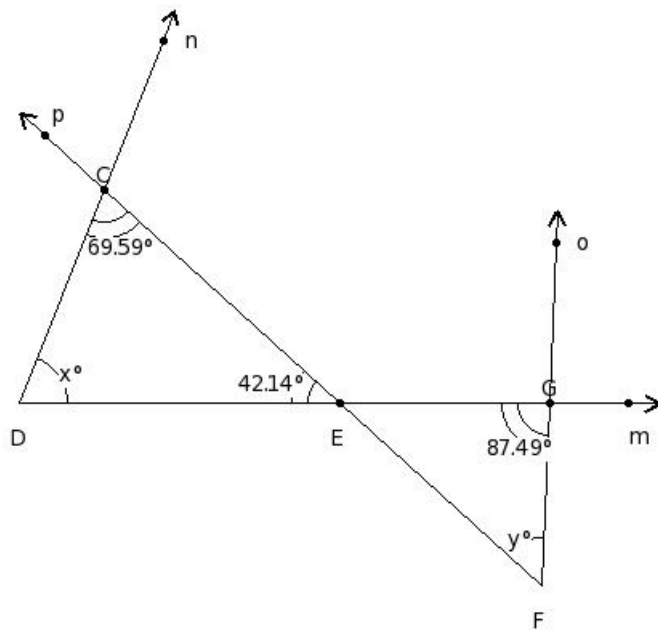


- (i) $x = 33.07^\circ, y = 60.19^\circ$
 (ii) $x = 32.07^\circ, y = 59.19^\circ$
 (iii) $x = 35.07^\circ, y = 62.19^\circ$
 (iv) $x = 34.07^\circ, y = 61.19^\circ$
 (v) $x = 36.07^\circ, y = 63.19^\circ$

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

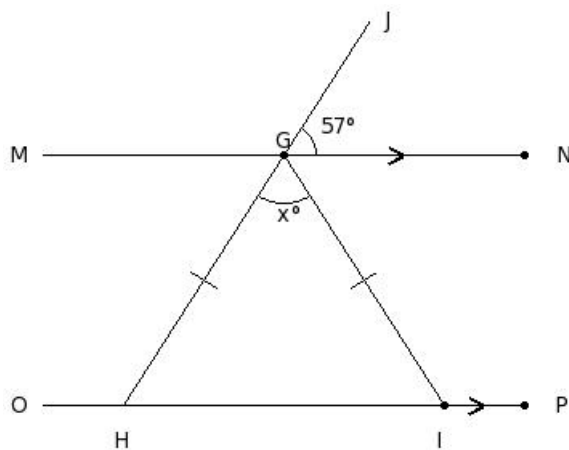
- (i) $X = 43^\circ, Y = 92^\circ, Z = 45^\circ$
 (ii) $X = 45^\circ, Y = 88^\circ, Z = 47^\circ$
 (iii) $X = 47^\circ, Y = 90^\circ, Z = 43^\circ$
 (iv) $X = 45^\circ, Y = 90^\circ, Z = 45^\circ$
 (v) $X = 43^\circ, Y = 90^\circ, Z = 47^\circ$

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



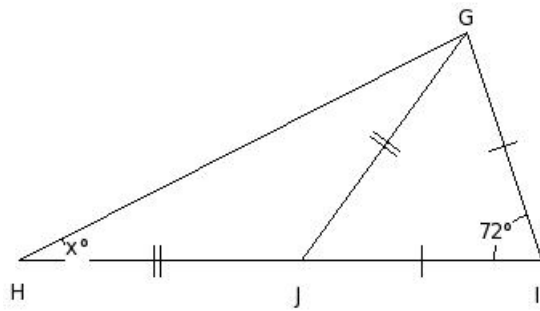
- (i) $x = 70.27^\circ, y = 52.37^\circ$
- (ii) $x = 68.27^\circ, y = 50.37^\circ$
- (iii) $x = 66.27^\circ, y = 48.37^\circ$
- (iv) $x = 69.27^\circ, y = 51.37^\circ$
- (v) $x = 67.27^\circ, y = 49.37^\circ$

44. In the given figure, $MN \parallel OP$, $\angle JGN = 57^\circ$ and $GH = IG$. Find the measure of x .



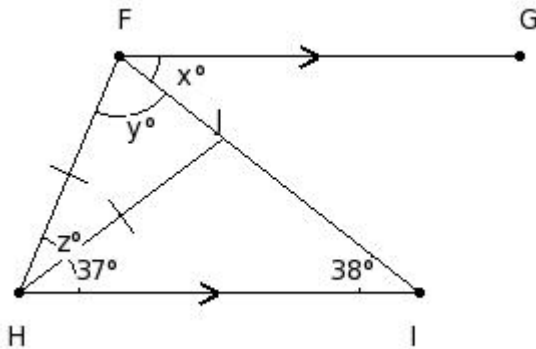
- (i) $x = 65^\circ$ (ii) $x = 68^\circ$ (iii) $x = 66^\circ$
- (iv) $x = 67^\circ$ (v) $x = 64^\circ$

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



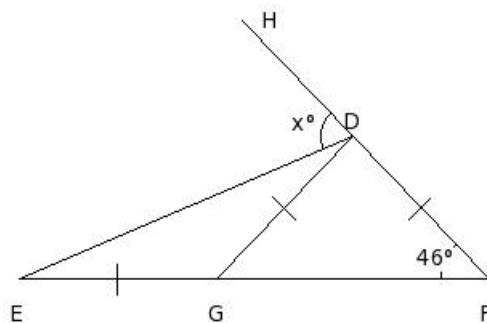
- (i) $x = 26^\circ$ (ii) $x = 29^\circ$ (iii) $x = 27^\circ$
 (iv) $x = 28^\circ$ (v) $x = 25^\circ$

46. In the given figure, $FG \parallel HI$ and $FH = HJ$. Find the values of x, y and z .



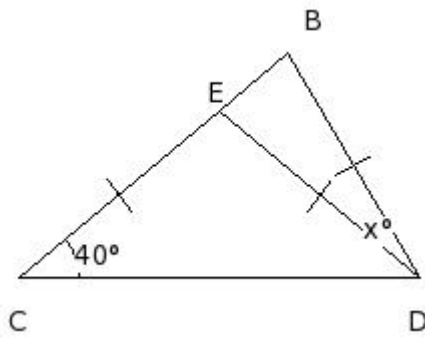
- (i) $x = 36^\circ, y = 75^\circ, z = 32^\circ$
 (ii) $x = 40^\circ, y = 75^\circ, z = 28^\circ$
 (iii) $x = 38^\circ, y = 73^\circ, z = 32^\circ$
 (iv) $x = 36^\circ, y = 77^\circ, z = 30^\circ$
 (v) $x = 38^\circ, y = 75^\circ, z = 30^\circ$

47. In the given figure, if $FD = DG = EG$. Find the value of x .



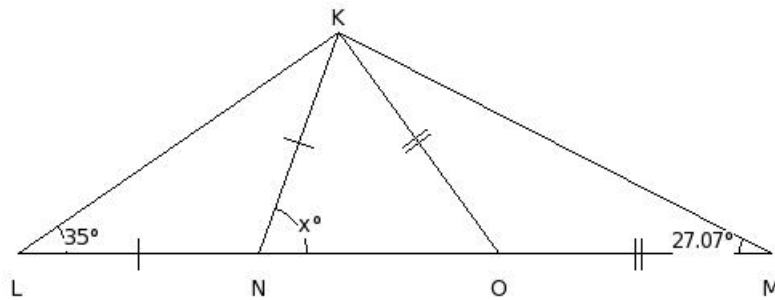
- (i) $x = 69^\circ$ (ii) $x = 67^\circ$ (iii) $x = 70^\circ$
 (iv) $x = 71^\circ$ (v) $x = 68^\circ$

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



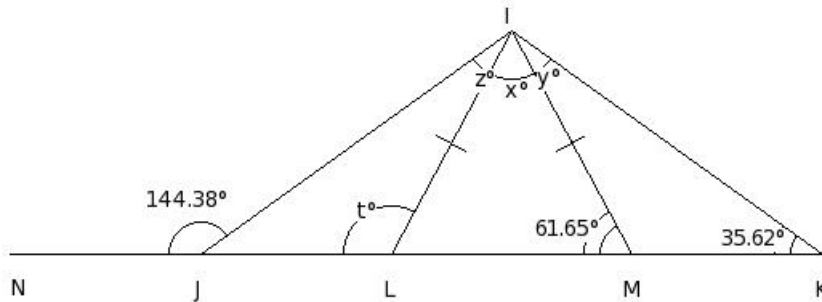
- (i) $x = 20^\circ$ (ii) $x = 22^\circ$ (iii) $x = 18^\circ$
 (iv) $x = 21^\circ$ (v) $x = 19^\circ$

49. In the given figure, if $NK = LN$ and $KO = OM$, find the value of x .



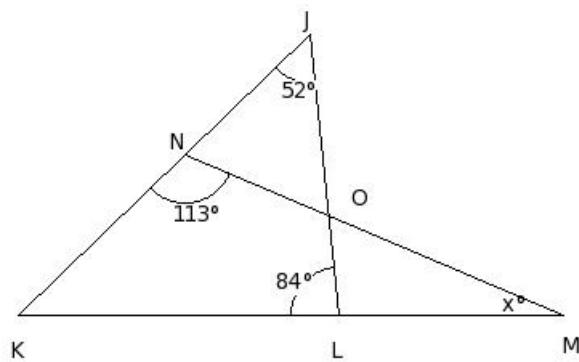
- (i) $x = 69^\circ$ (ii) $x = 68^\circ$ (iii) $x = 70^\circ$
 (iv) $x = 71^\circ$ (v) $x = 72^\circ$

50. In the given figure, if $IL = ML$, find the values of x , y , z and t



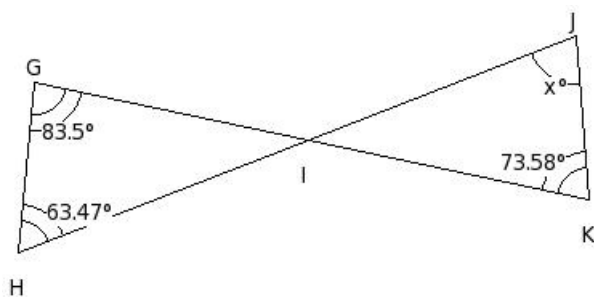
- (i) $x = 56.7^\circ$, $y = 24.03^\circ$, $z = 24.03^\circ$, $t = 118.35^\circ$
 (ii) $x = 56.7^\circ$, $y = 28.03^\circ$, $z = 28.03^\circ$, $t = 118.35^\circ$
 (iii) $x = 56.7^\circ$, $y = 26.03^\circ$, $z = 27.03^\circ$, $t = 119.35^\circ$
 (iv) $x = 56.7^\circ$, $y = 26.03^\circ$, $z = 26.03^\circ$, $t = 118.35^\circ$
 (v) $x = 56.7^\circ$, $y = 26.03^\circ$, $z = 25.03^\circ$, $t = 117.35^\circ$

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



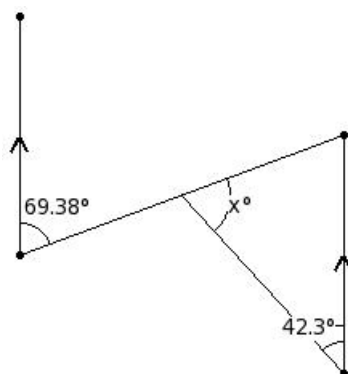
- (i) $x = 25^\circ$ (ii) $x = 24^\circ$ (iii) $x = 23^\circ$
 (iv) $x = 21^\circ$ (v) $x = 22^\circ$

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



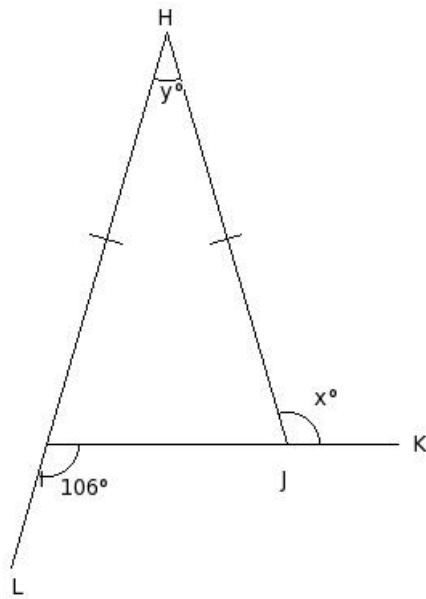
- (i) $x = 72.39^\circ$ (ii) $x = 74.39^\circ$ (iii) $x = 71.39^\circ$
 (iv) $x = 73.39^\circ$ (v) $x = 75.39^\circ$

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



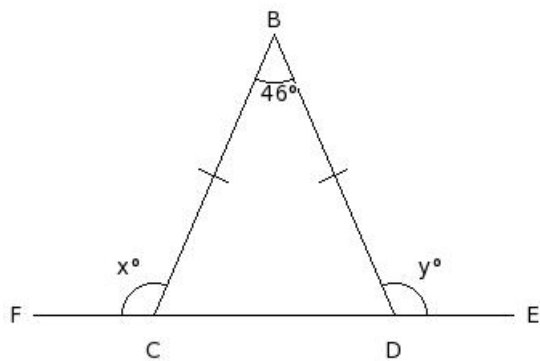
- (i) $x = 66.32^\circ$ (ii) $x = 68.32^\circ$ (iii) $x = 70.32^\circ$
 (iv) $x = 69.32^\circ$ (v) $x = 67.32^\circ$

54. Find the unknown marked angles in the following figure



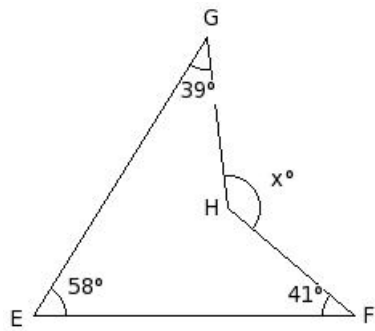
- (i) $x = 105^\circ, y = 31^\circ$ (ii) $x = 108^\circ, y = 34^\circ$ (iii) $x = 107^\circ, y = 33^\circ$
(iv) $x = 106^\circ, y = 32^\circ$ (v) $x = 104^\circ, y = 30^\circ$

55. Find the unknown marked angles in the following figure



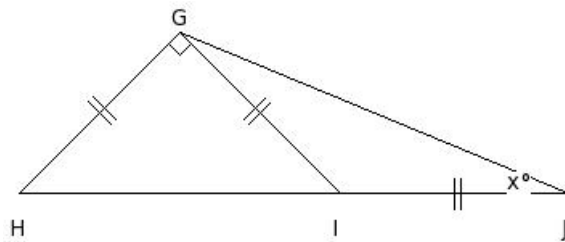
- (i) $x = 114^\circ, y = 114^\circ$
(ii) $x = 112^\circ, y = 112^\circ$
(iii) $x = 111^\circ, y = 111^\circ$
(iv) $x = 115^\circ, y = 115^\circ$
(v) $x = 113^\circ, y = 113^\circ$

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



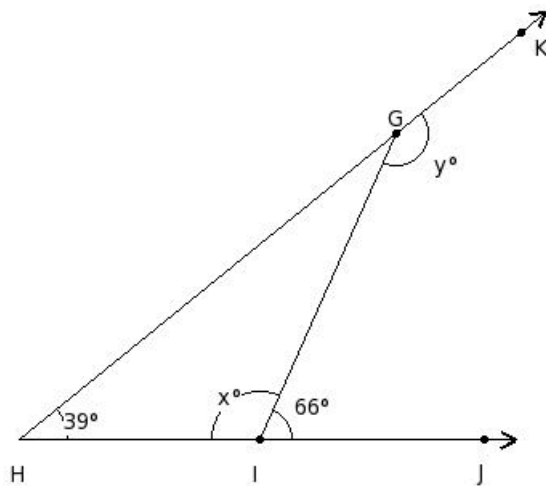
- (i) $x = 140^\circ$ (ii) $x = 137^\circ$ (iii) $x = 136^\circ$
 (iv) $x = 138^\circ$ (v) $x = 139^\circ$

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



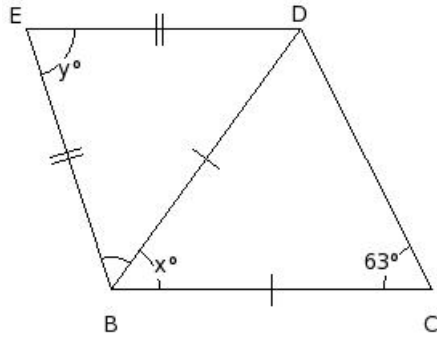
- (i) $x = 23.5^\circ$ (ii) $x = 24.5^\circ$ (iii) $x = 21.5^\circ$
 (iv) $x = 22.5^\circ$ (v) $x = 20.5^\circ$

58. Find the unknown marked angles in the following figure



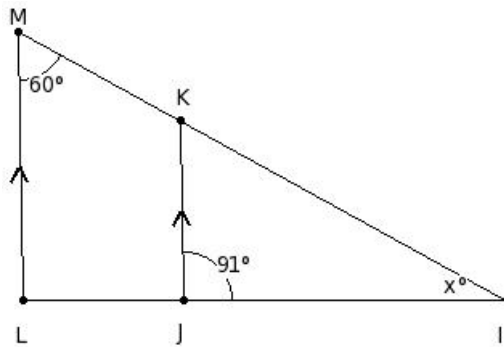
- (i) $x = 116^\circ, y = 155^\circ$
 (ii) $x = 114^\circ, y = 153^\circ$
 (iii) $x = 112^\circ, y = 151^\circ$
 (iv) $x = 115^\circ, y = 154^\circ$
 (v) $x = 113^\circ, y = 152^\circ$

59. In the following figure $BC \parallel ED$, find the values of x and y .



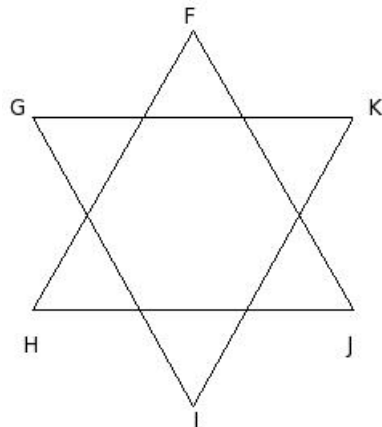
- (i) $x = 56^\circ, y = 74^\circ$
- (ii) $x = 53^\circ, y = 71^\circ$
- (iii) $x = 55^\circ, y = 73^\circ$
- (iv) $x = 52^\circ, y = 70^\circ$
- (v) $x = 54^\circ, y = 72^\circ$

60. In the given figure, it is given that $KJ \parallel ML$, $\angle KML = 60^\circ$ and $\angle KJI = 91^\circ$. Find the value of x .



- (i) $x = 30^\circ$ (ii) $x = 31^\circ$ (iii) $x = 28^\circ$
- (iv) $x = 27^\circ$ (v) $x = 29^\circ$

61. In the given two equilateral triangles, find $\angle F + \angle H + \angle J + \angle G + \angle I + \angle K$.



- (i) 361° (ii) 358° (iii) 360° (iv) 362° (v) 359°

Assignment Key

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

- 40) (ii)
- 41) (iv)
- 42) (iv)
- 43) (ii)
- 44) (iii)
- 45) (iii)
- 46) (v)
- 47) (i)
- 48) (i)
- 49) (iii)
- 50) (iv)
- 51) (iii)
- 52) (iv)
- 53) (ii)
- 54) (iv)
- 55) (v)
- 56) (iv)
- 57) (iv)
- 58) (ii)
- 59) (v)
- 60) (v)
- 61) (iii)