

**EduSahara™ Learning Center Assignment**

Grade : Class VII, CBSE  
Chapter : The Triangle and its Properties  
Name : Triangle Angle Properties  
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1. Two angles of a triangle measure  $51^\circ$  and  $56^\circ$  respectively. Find the measure of the third angle of the triangle

(i)  $73^\circ$  (ii)  $74^\circ$  (iii)  $75^\circ$  (iv)  $72^\circ$  (v)  $71^\circ$

2. The angles of a triangle ABC are in the ratio 7 : 10 : 19. Find the measure of each angle of the triangle

(i)  $A = 37^\circ$ ,  $B = 50^\circ$ ,  $C = 93^\circ$

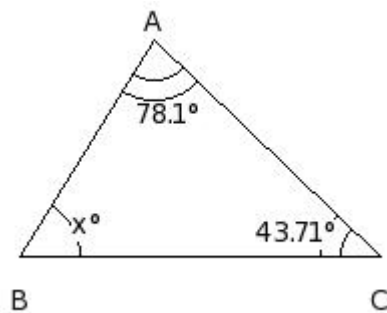
(ii)  $A = 35^\circ$ ,  $B = 50^\circ$ ,  $C = 95^\circ$

(iii)  $A = 33^\circ$ ,  $B = 52^\circ$ ,  $C = 95^\circ$

(iv)  $A = 33^\circ$ ,  $B = 50^\circ$ ,  $C = 97^\circ$

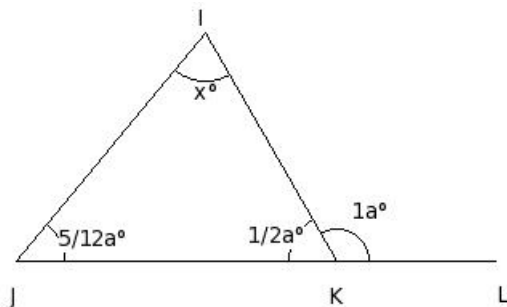
(v)  $A = 35^\circ$ ,  $B = 48^\circ$ ,  $C = 97^\circ$

3. Find the unknown angle from the following figure



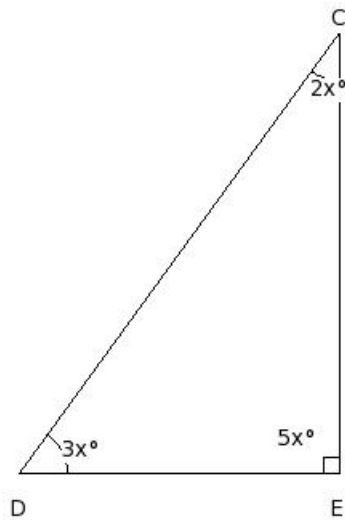
(i)  $x = 57.19^\circ$  (ii)  $x = 56.19^\circ$  (iii)  $x = 59.19^\circ$  (iv)  $x = 60.19^\circ$  (v)  $x = 58.19^\circ$

4. In the given figure,  $\triangle IJK$  in which side JK has been produced to L. If  $\angle KIJ = x^\circ$ ,  $\angle IJK = (5/12a)^\circ$ ,  $\angle JKI = (1/2a)^\circ$  and  $\angle IKL = (1a)^\circ$ , find the values of a and x.



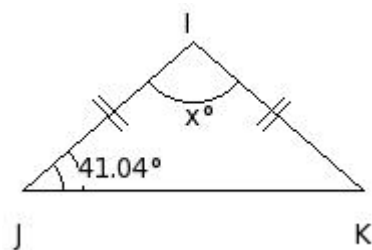
- (i)  $a = 122^\circ, x = 72^\circ$
- (ii)  $a = 118^\circ, x = 68^\circ$
- (iii)  $a = 119^\circ, x = 69^\circ$
- (iv)  $a = 121^\circ, x = 71^\circ$
- (v)  $a = 120^\circ, x = 70^\circ$

5. Find the angles of the triangle



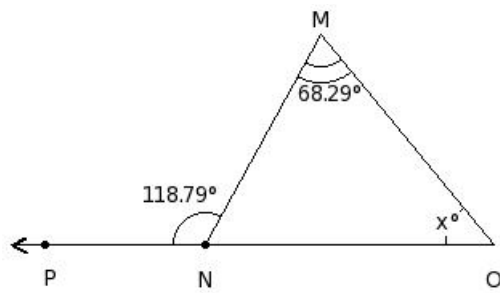
- (i)  $C = 34^\circ, D = 54^\circ, E = 92^\circ$
- (ii)  $C = 34^\circ, D = 56^\circ, E = 90^\circ$
- (iii)  $C = 36^\circ, D = 52^\circ, E = 92^\circ$
- (iv)  $C = 38^\circ, D = 54^\circ, E = 88^\circ$
- (v)  $C = 36^\circ, D = 54^\circ, E = 90^\circ$

6. Calculate the value of  $x$  in the following figure



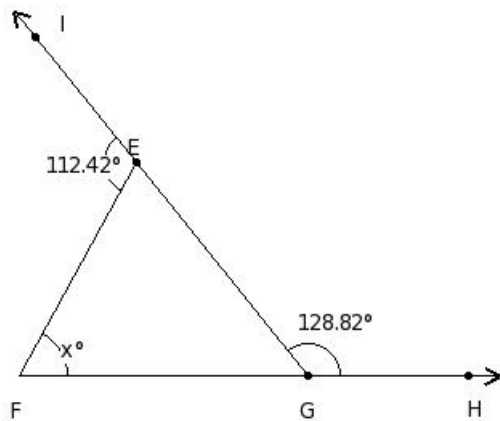
- (i)  $x = 97.92^\circ$  (ii)  $x = 98.92^\circ$  (iii)  $x = 99.92^\circ$
- (iv)  $x = 96.92^\circ$  (v)  $x = 95.92^\circ$

7. Calculate the value of  $x$  in the following figure



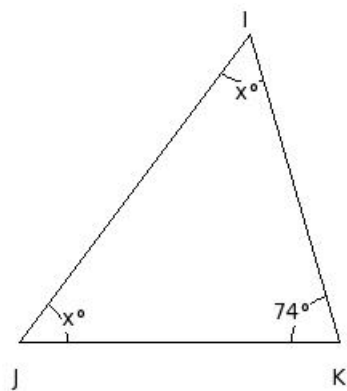
- (i)  $x = 51.5^\circ$  (ii)  $x = 52.5^\circ$  (iii)  $x = 48.5^\circ$   
 (iv)  $x = 50.5^\circ$  (v)  $x = 49.5^\circ$

8. Find the unknown marked angle in the following figure



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

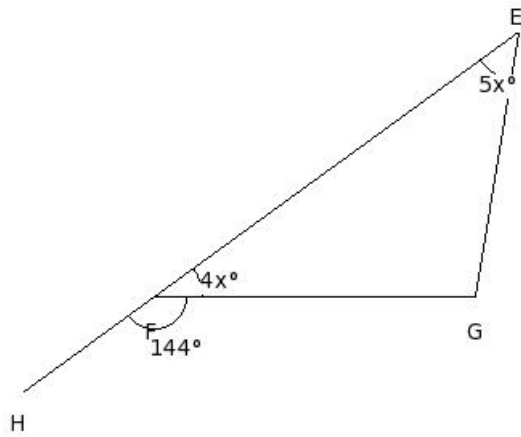
9. Find the unknown angles in the following figure



- (i)  $I = 51^\circ, J = 51^\circ$   
 (ii)  $I = 52^\circ, J = 52^\circ$   
 (iii)  $I = 54^\circ, J = 54^\circ$   
 (iv)  $I = 55^\circ, J = 55^\circ$

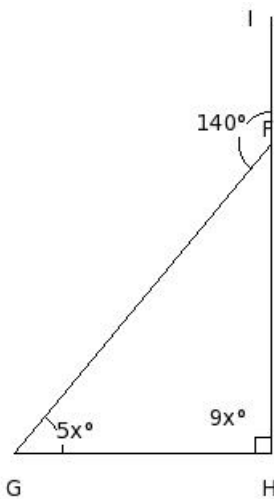
(v)  $I = 53^\circ, J = 53^\circ$

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



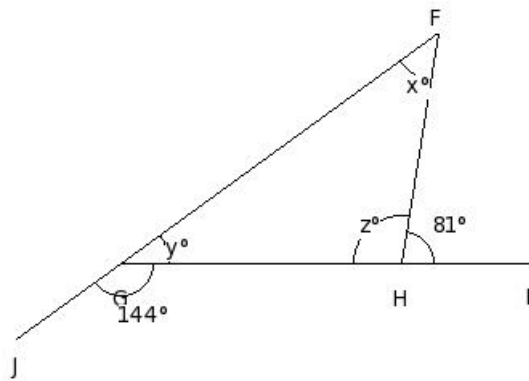
- (i)  $E = 47^\circ, F = 36^\circ, G = 97^\circ$   
 (ii)  $E = 43^\circ, F = 38^\circ, G = 99^\circ$   
 (iii)  $E = 43^\circ, F = 36^\circ, G = 101^\circ$   
 (iv)  $E = 45^\circ, F = 36^\circ, G = 99^\circ$   
 (v)  $E = 45^\circ, F = 34^\circ, G = 101^\circ$

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



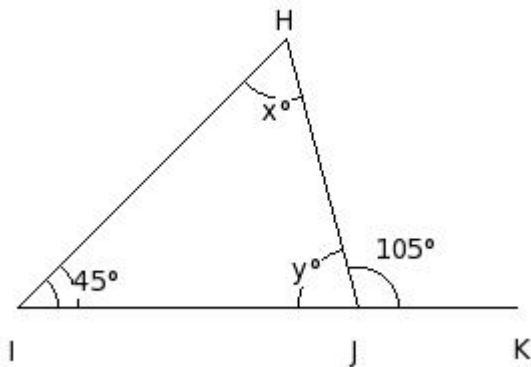
- (i)  $F = 42^\circ, G = 50^\circ, H = 88^\circ$   
 (ii)  $F = 40^\circ, G = 50^\circ, H = 90^\circ$   
 (iii)  $F = 38^\circ, G = 52^\circ, H = 90^\circ$   
 (iv)  $F = 38^\circ, G = 50^\circ, H = 92^\circ$   
 (v)  $F = 40^\circ, G = 48^\circ, H = 92^\circ$

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



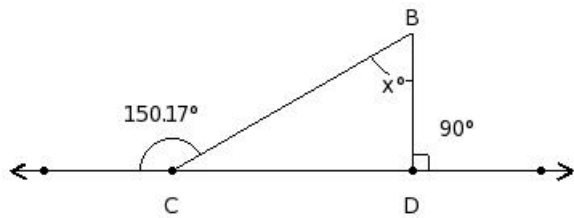
- (i)  $x = 47^\circ, y = 36^\circ, z = 97^\circ$
- (ii)  $x = 45^\circ, y = 36^\circ, z = 99^\circ$
- (iii)  $x = 45^\circ, y = 34^\circ, z = 101^\circ$
- (iv)  $x = 43^\circ, y = 36^\circ, z = 101^\circ$
- (v)  $x = 43^\circ, y = 38^\circ, z = 99^\circ$

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



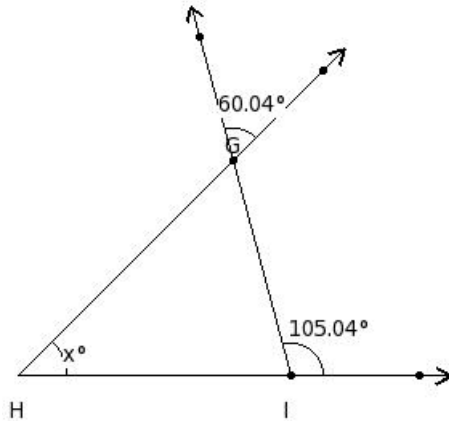
- (i)  $x = 58^\circ, y = 73^\circ$
- (ii)  $x = 60^\circ, y = 75^\circ$
- (iii)  $x = 62^\circ, y = 77^\circ$
- (iv)  $x = 61^\circ, y = 76^\circ$
- (v)  $x = 59^\circ, y = 74^\circ$

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



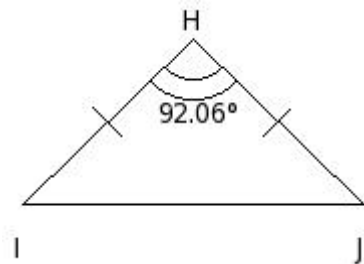
- (i)  $x = 61.17^\circ$  (ii)  $x = 62.17^\circ$  (iii)  $x = 60.17^\circ$   
 (iv)  $x = 59.17^\circ$  (v)  $x = 58.17^\circ$

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



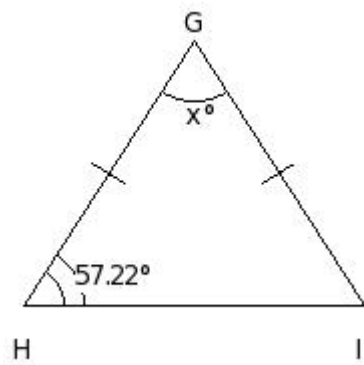
- (i)  $x = 46^\circ$  (ii)  $x = 44^\circ$  (iii)  $x = 43^\circ$   
 (iv)  $x = 45^\circ$  (v)  $x = 47^\circ$

16. In the given triangle,  $\angle H = 92.06^\circ$ . Find the measure of  $\angle I$  and  $\angle J$



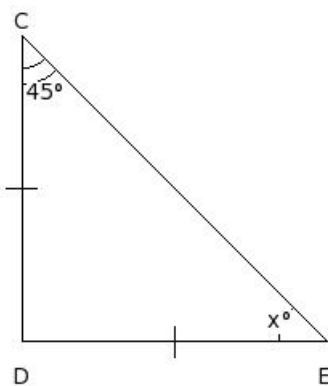
- (i)  $\angle I = \angle J = 42.97^\circ$   
 (ii)  $\angle I = \angle J = 43.97^\circ$   
 (iii)  $\angle I = \angle J = 45.97^\circ$   
 (iv)  $\angle I = \angle J = 44.97^\circ$   
 (v)  $\angle I = \angle J = 41.97^\circ$

17. Find the unknown angle in the following figure



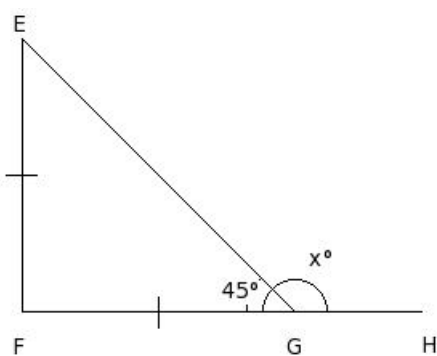
- (i)  $x = 67.56^\circ$  (ii)  $x = 66.56^\circ$  (iii)  $x = 64.56^\circ$   
 (iv)  $x = 63.56^\circ$  (v)  $x = 65.56^\circ$

18. Find the unknown angle in the following figure



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

19. Find the unknown angle in the following figure



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

20. In  $\triangle CDE$ , if  $\angle C = 54^\circ$  and  $\angle D = 56^\circ$ , find the measure of  $\angle E$

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

21. In  $\triangle HIJ$ , if  $\angle H = 70^\circ$  and  $\angle I = \angle J$ , find the measure of each of the equal angles of the triangle  
(i)  $56^\circ$  (ii)  $54^\circ$  (iii)  $57^\circ$  (iv)  $53^\circ$  (v)  $55^\circ$
- 
22. One angle of a triangle measures  $55^\circ$  and the other two angles are in the ratio 9 : 16. Find these angles.  
(i)  $B = 45^\circ, C = 80^\circ$   
(ii)  $B = 46^\circ, C = 81^\circ$   
(iii)  $B = 43^\circ, C = 78^\circ$   
(iv)  $B = 44^\circ, C = 79^\circ$   
(v)  $B = 47^\circ, C = 82^\circ$
- 
23. In a right-angled triangle, the two acute angles are in the ratio 5 : 13. Find these angles.  
(i)  $A = 24^\circ, C = 64^\circ$   
(ii)  $A = 26^\circ, C = 66^\circ$   
(iii)  $A = 25^\circ, C = 65^\circ$   
(iv)  $A = 27^\circ, C = 67^\circ$   
(v)  $A = 23^\circ, C = 63^\circ$
- 
24. One of the two equal angles of an isosceles triangle measures  $61^\circ$ . Find the measure of each angle of the triangle.  
(i)  $A = 59^\circ, B = 63^\circ, C = 58^\circ$   
(ii)  $A = 59^\circ, B = 61^\circ, C = 60^\circ$   
(iii)  $A = 61^\circ, B = 59^\circ, C = 60^\circ$   
(iv)  $A = 61^\circ, B = 61^\circ, C = 58^\circ$   
(v)  $A = 63^\circ, B = 61^\circ, C = 56^\circ$
- 
25. Find the measure of each of the two equal angles of an isosceles right-angled triangle.  
(i)  $44^\circ$  (ii)  $47^\circ$  (iii)  $45^\circ$  (iv)  $46^\circ$  (v)  $43^\circ$
- 
26. If all the three angles of a triangle are of the same measure, find the measure of each of the angles.  
(i)  $60^\circ$  (ii)  $61^\circ$  (iii)  $59^\circ$  (iv)  $62^\circ$  (v)  $58^\circ$
- 
27. In a right-angled triangle if one of the acute angles is  $42^\circ$ , find the measure of the other acute angle.  
(i)  $46^\circ$  (ii)  $48^\circ$  (iii)  $49^\circ$  (iv)  $50^\circ$  (v)  $47^\circ$
-

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

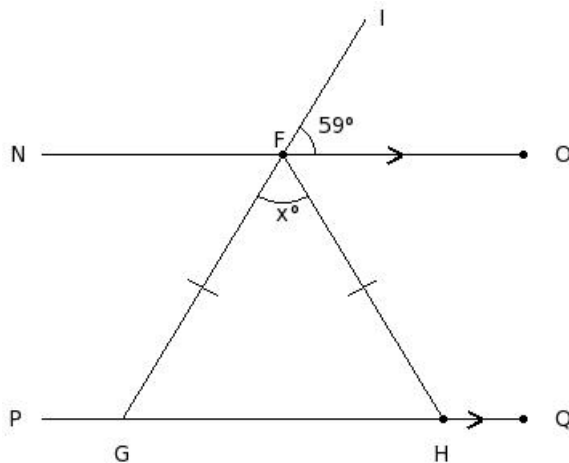
29. In an isosceles triangle, each base angle is four times its vertical angle. Find each angle of the triangle.

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

30. The ratio between the base angle and the vertical angle of an isosceles triangle is 1 : 2. Find each angle of the triangle

- (i)  $A = 88^\circ, B = 47^\circ, C = 45^\circ$
  - (ii)  $A = 88^\circ, B = 45^\circ, C = 47^\circ$
  - (iii)  $A = 92^\circ, B = 45^\circ, C = 43^\circ$
  - (iv)  $A = 90^\circ, B = 43^\circ, C = 47^\circ$
  - (v)  $A = 90^\circ, B = 45^\circ, C = 45^\circ$
- 

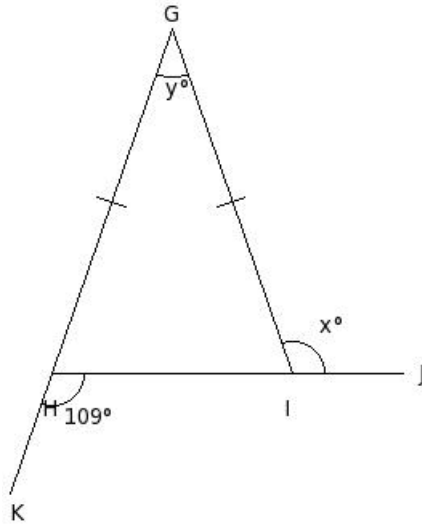
31. In the given figure,  $NO \parallel PQ$ ,  $\angle IFO = 59^\circ$  and  $FG = HF$ . Find the measure of  $x$ .



- (i)  $x = 63^\circ$  (ii)  $x = 62^\circ$  (iii)  $x = 64^\circ$
- (iv)  $x = 60^\circ$  (v)  $x = 61^\circ$

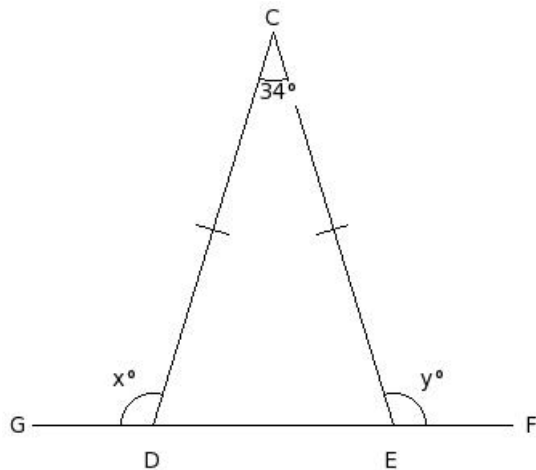
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32. Find the unknown marked angles in the following figure



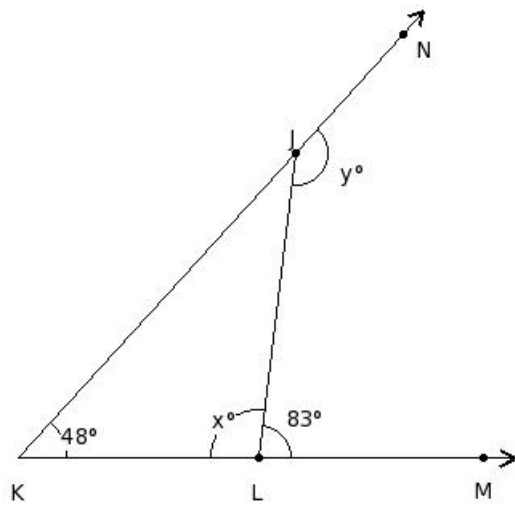
- (i)  $x = 107^\circ, y = 36^\circ$  (ii)  $x = 108^\circ, y = 37^\circ$  (iii)  $x = 109^\circ, y = 38^\circ$   
(iv)  $x = 110^\circ, y = 39^\circ$  (v)  $x = 111^\circ, y = 40^\circ$
- 

33. Find the unknown marked angles in the following figure



- (i)  $x = 108^\circ, y = 108^\circ$   
(ii)  $x = 106^\circ, y = 106^\circ$   
(iii)  $x = 109^\circ, y = 109^\circ$   
(iv)  $x = 107^\circ, y = 107^\circ$   
(v)  $x = 105^\circ, y = 105^\circ$
- 

34. Find the unknown marked angles in the following figure



- (i)  $x = 96^\circ, y = 144^\circ$
  - (ii)  $x = 99^\circ, y = 147^\circ$
  - (iii)  $x = 97^\circ, y = 145^\circ$
  - (iv)  $x = 95^\circ, y = 143^\circ$
  - (v)  $x = 98^\circ, y = 146^\circ$
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## Assignment Key

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- 1) (i)
- 2) (ii)
- 3) (v)
- 4) (v)
- 5) (v)
- 6) (i)
- 7) (iv)
- 8) (ii)
- 9) (v)
- 10) (iv)
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- 13) (ii)
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- 16) (ii)
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- 19) (v)
- 20) (ii)
- 21) (v)
- 22) (i)
- 23) (iii)
- 24) (iv)
- 25) (iii)
- 26) (i)
- 27) (ii)
- 28) (iv)
- 29) (ii)
- 30) (v)
- 31) (ii)
- 32) (iii)
- 33) (iv)
- 34) (iii)