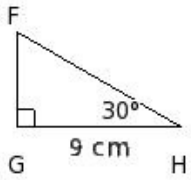
EduSahara™ Assignment

Name : Trigonometry Diagram Problems

Chapter : Trigonometrical Identities

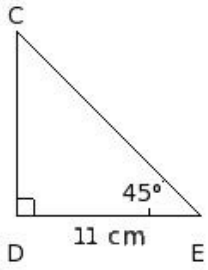
Grade : ICSE Grade X

1. In the given figure, △FGH is right angled at G. If GH = 9 cm and ∠H = 30°, find FG and FH



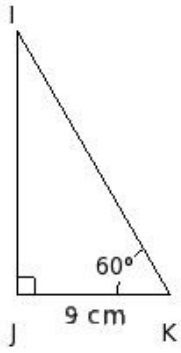
(i) $3\sqrt[4]{3}$ cm & 18 cm (ii) $3\sqrt{3}$ cm & $6\sqrt{3}$ cm (iii) $3\sqrt[4]{3}$ cm & $6\sqrt{3}$ cm (iv) $3\sqrt[4]{3}$ cm & 21 cm (v) 3 cm & 21 cm

2. In the given figure, △CDE is right angled at D. If DE = 11 cm and ∠E = 45°, find CD and CE



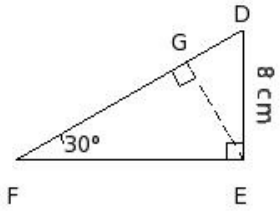
(i) 12 cm & 24 cm (ii) 12 cm & $11\sqrt{2}$ cm (iii) 11 cm & $11\sqrt{2}$ cm (iv) 9 cm & 24 cm (v) 12 cm & 22 cm

3. In the given figure, △IJK is right angled at J. If JK = 9 cm and ∠K = 60°, find IJ and IK



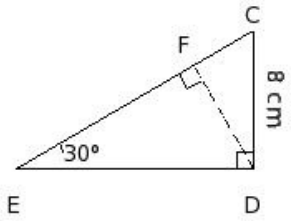
(i) 9 cm & 19 cm (ii) $9\sqrt[4]{3}$ cm & 17 cm (iii) $9\sqrt{3}$ cm & 18 cm (iv) $9\sqrt[4]{3}$ cm & 19 cm (v) $9\sqrt[4]{3}$ cm & 18 cm

4. In the given figure, △DFE is right angled at E. If DE = 8 cm and ∠F = 30°, find DF



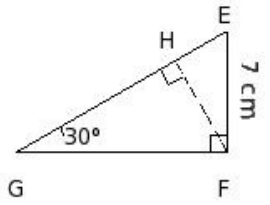
(i) 14 cm (ii) 18 cm (iii) 15 cm (iv) 17 cm (v) 16 cm

5. In the given figure, △CED is right angled at D. If CD = 8 cm and ∠E = 30°, find DE



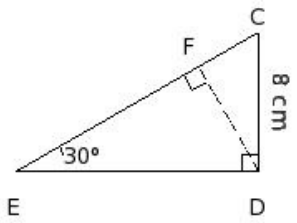
(i) 8 cm (ii) $8\sqrt{3}$ cm (iii) $12\sqrt{2}$ cm (iv) 24 cm (v) $8\sqrt{18}$ cm

6. In the given figure, △EGF is right angled at F. If EF = 7 cm and ∠G = 30°, find EH



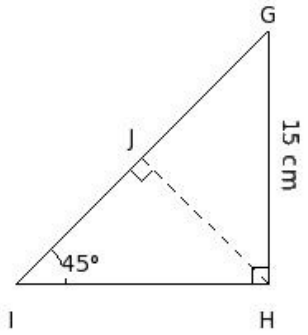
(i) $\frac{13}{4}$ cm (ii) $\frac{5}{2}$ cm (iii) 4 cm (iv) $\frac{9}{2}$ cm (v) $\frac{7}{2}$ cm

7. In the given figure, △CED is right angled at D. If CD = 8 cm and ∠E = 30°, find EF



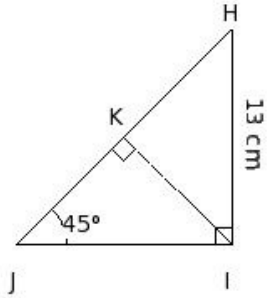
(i) 14 cm (ii) 11 cm (iii) 10 cm (iv) 12 cm (v) 13 cm

8. In the given figure, △GIH is right angled at H. If GH = 15 cm and ∠I = 45°, find GI



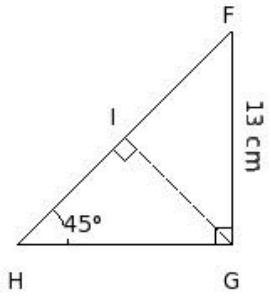
(i) 15 cm (ii) $\frac{15}{2}\sqrt{12}$ cm (iii) 30 cm (iv) $15\sqrt{2}$ cm (v) $30\sqrt{3}$ cm

9. In the given figure, △HJI is right angled at I. If HI = 13 cm and ∠J = 45°, find IJ



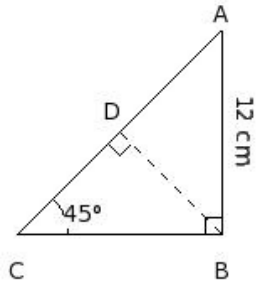
(i) 14 cm (ii) 11 cm (iii) 13 cm (iv) 12 cm (v) 15 cm

10. In the given figure, △FHG is right angled at G. If FG = 13 cm and ∠H = 45°, find FI



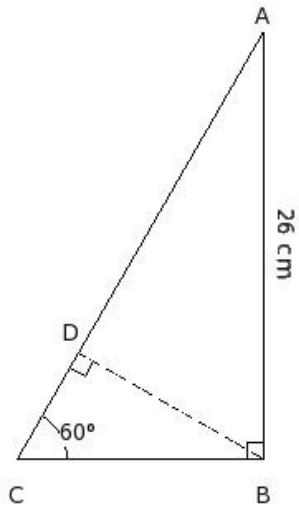
(i) $13\sqrt{3}$ cm (ii) 13 cm (iii) $\frac{13}{4}\sqrt{12}$ cm (iv) $\frac{13}{2}$ cm (v) $\frac{13}{2}\sqrt{2}$ cm

11. In the given figure, △ACB is right angled at B. If AB = 12 cm and ∠C = 45°, find CD



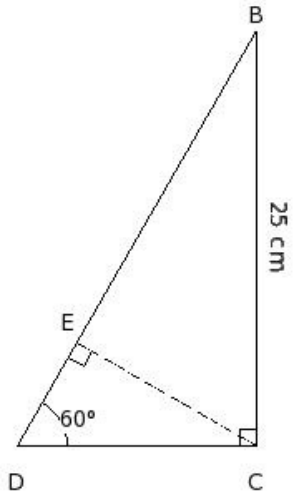
(i) 12 cm (ii) 6 cm (iii) $6\sqrt{2}$ cm (iv) $12\sqrt{3}$ cm (v) $3\sqrt{12}$ cm

12. In the given figure, △ACB is right angled at B. If AB = 26 cm and ∠C = 60°, find AC



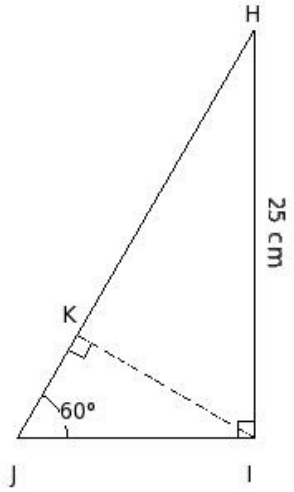
(i) $26\sqrt{2}$ cm (ii) $\frac{52}{3}\sqrt{3}$ cm (iii) $\frac{52}{3}\sqrt{18}$ cm (iv) $\frac{52}{3}$ cm (v) 52 cm

13. In the given figure, △BDC is right angled at C. If BC = 25 cm and ∠D = 60°, find CD



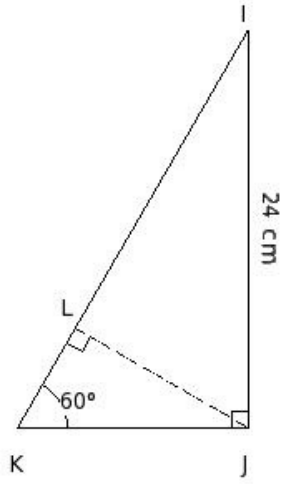
(i) $\frac{25}{3}\sqrt{3}$ cm (ii) $\frac{25}{3}$ cm (iii) 25 cm (iv) $\frac{25}{3}\sqrt{18}$ cm (v) $\frac{25}{2}\sqrt{2}$ cm

14. In the given figure, △HJI is right angled at I. If HI = 25 cm and ∠J = 60°, find HK



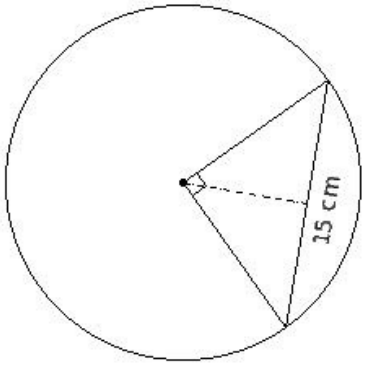
(i) $\frac{25}{2}\sqrt{3}$ cm (ii) $\frac{75}{2}$ cm (iii) $\frac{25}{2}\sqrt{18}$ cm (iv) $\frac{25}{2}$ cm (v) $\frac{75}{4}\sqrt{2}$ cm

15. In the given figure, △IKJ is right angled at J. If IJ = 24 cm and ∠K = 60°, find KL



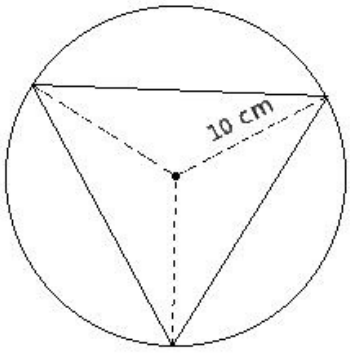
(i) $4\sqrt{3}$ cm (ii) $4\sqrt{18}$ cm (iii) 4 cm (iv) $6\sqrt{2}$ cm (v) 12 cm

16. A chord of 15 cm subtends an angle of 90° at the centre. Calculate its shortest distance from the centre



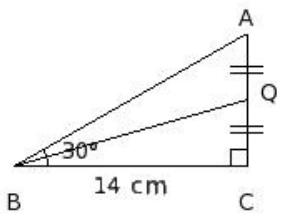
(i) 6.5 cm (ii) 7.5 cm (iii) 5.5 cm (iv) 8.5 cm (v) 9.5 cm

17. An equilateral triangle is inscribed in a circle of radius 10 cm. Find the length of its sides.



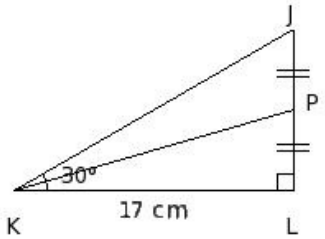
(i) $10\sqrt{18}$ cm (ii) 30 cm (iii) $15\sqrt{2}$ cm (iv) $10\sqrt{3}$ cm (v) 10 cm

18. In the given figure, △ABC is a right angle triangle with ∠C = 90° and BC = 14 cm. Q is the mid-point of AC. Find QC



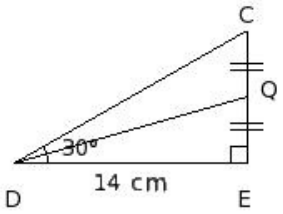
(i) $\frac{7}{3}\sqrt{3}$ cm (ii) $\frac{7}{3}$ cm (iii) 7 cm (iv) $\frac{7}{3}\sqrt{18}$ cm (v) $\frac{7}{2}\sqrt{2}$ cm

19. In the given figure, △JKL is a right angle triangle with ∠L = 90° and KL = 17 cm. P is the mid-point of JL. Find ∠PKL using tables.



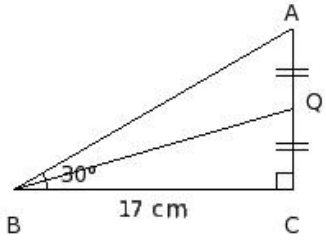
(i) 13° 6' (ii) 16° 6' (iii) 14° 6' (iv) 18° 6' (v) 19° 6'

20. In the given figure, △CDE is a right angle triangle with ∠E = 90° and DE = 14 cm. Q is the mid-point of CE. Find the length of the altitude from E to CD.



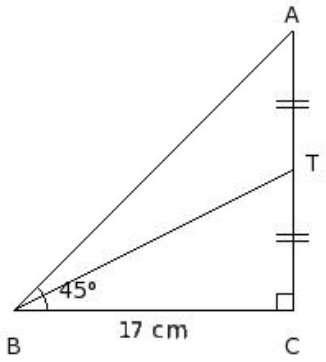
(i) 7 cm (ii) 10 cm (iii) 8 cm (iv) 5 cm (v) 6 cm

21. In the given figure, △ABC is a right angle triangle with ∠C = 90° and BC = 17 cm. Q is the mid-point of AC. Find ∠QBA using tables.



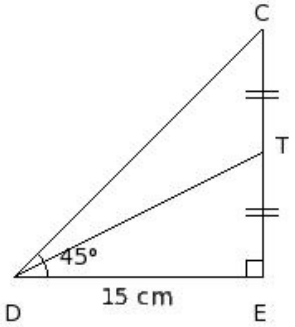
(i) 16° 54' (ii) 10° 54' (iii) 11° 54' (iv) 15° 54' (v) 13° 54'

22. In the given figure, △ABC is a right angle triangle with ∠C = 90° and BC = 17 cm. T is the mid-point of AC. Find TC



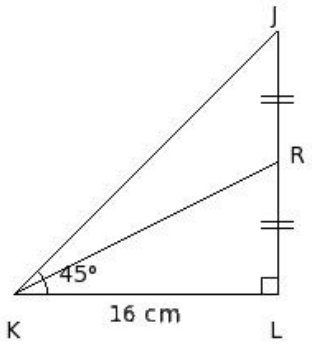
(i) 9 cm (ii) $\frac{33}{4}$ cm (iii) $\frac{15}{2}$ cm (iv) $\frac{19}{2}$ cm (v) $\frac{17}{2}$ cm

23. In the given figure, △CDE is a right angle triangle with ∠E = 90° and DE = 15 cm. T is the mid-point of CE. Find ∠TDE using tables.



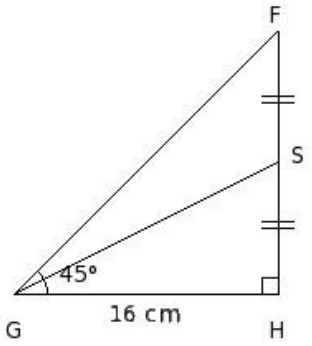
(i) 26° 34' (ii) 28° 34' (iii) 23° 34' (iv) 24° 34' (v) 29° 34'

24. In the given figure, △JKL is a right angle triangle with ∠L = 90° and KL = 16 cm. R is the mid-point of JL. Find the length of the altitude from L to JK.



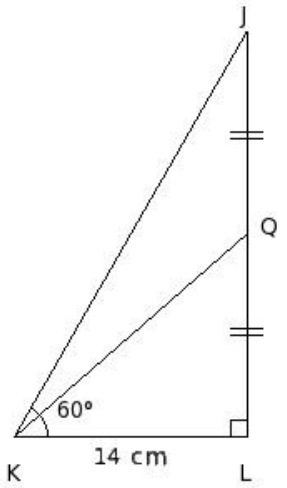
(i) $8\sqrt{2}$ cm (ii) $4\sqrt{12}$ cm (iii) $16\sqrt{3}$ cm (iv) 8 cm (v) 16 cm

25. In the given figure, △FGH is a right angle triangle with ∠H = 90° and GH = 16 cm. S is the mid-point of FH. Find ∠SGF using tables.



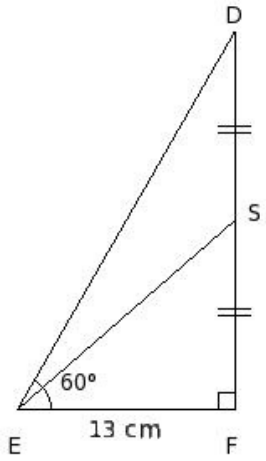
(i) 18° 26' (ii) 15° 26' (iii) 21° 26' (iv) 16° 26' (v) 20° 26'

26. In the given figure, △JKL is a right angle triangle with ∠L = 90° and KL = 14 cm. Q is the mid-point of JL. Find QL



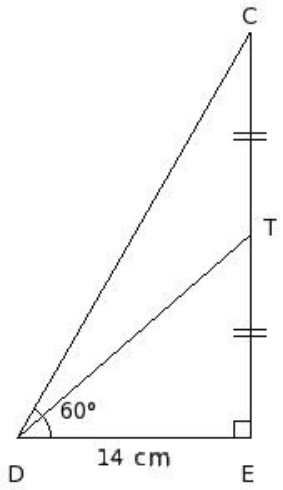
(i) $7\sqrt{18}$ cm (ii) $7\sqrt{3}$ cm (iii) $\frac{21}{2}\sqrt{2}$ cm (iv) 21 cm (v) 7 cm

27. In the given figure, △DEF is a right angle triangle with ∠F = 90° and EF = 13 cm. S is the mid-point of DF. Find ∠SEF using tables.



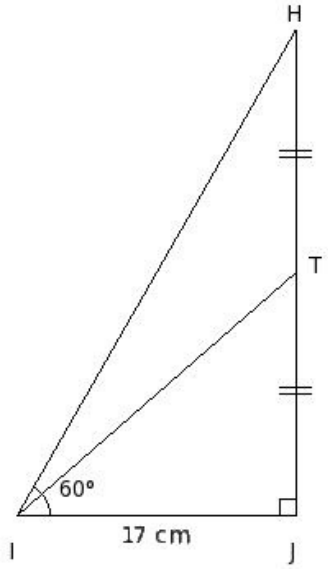
(i) 42° 53' (ii) 37° 53' (iii) 40° 53' (iv) 43° 53' (v) 38° 53'

28. In the given figure, △CDE is a right angle triangle with ∠E = 90° and DE = 14 cm. T is the mid-point of CE. Find the length of the altitude from E to CD.



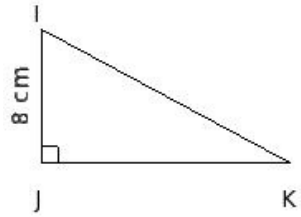
(i) $\frac{21}{2}\sqrt{2}$ cm (ii) 7 cm (iii) 21 cm (iv) $7\sqrt{18}$ cm (v) $7\sqrt{3}$ cm

29. In the given figure, △HIJ is a right angle triangle with ∠J = 90° and IJ = 17 cm. T is the mid-point of HJ. Find ∠TIH using tables.



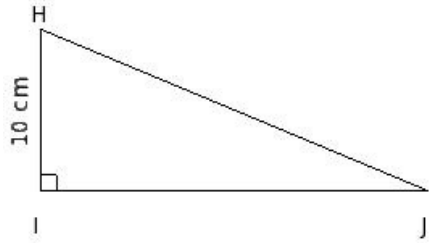
(i) 16° 7' (ii) 17° 7' (iii) 21° 7' (iv) 22° 7' (v) 19° 7'

30. In the given figure, if $IK - JK = 2$ cm, and $IJ = 8$ cm, find $\sin I$



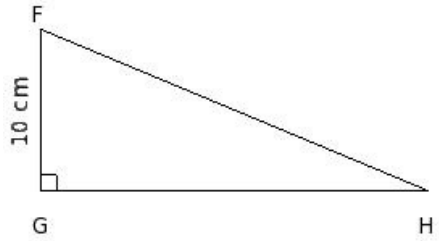
(i) $\frac{13}{17}$ (ii) $\frac{15}{19}$ (iii) $\frac{15}{17}$ (iv) 1

31. In the given figure, if $HJ - IJ = 2$ cm, and $HI = 10$ cm, find $\cos H$



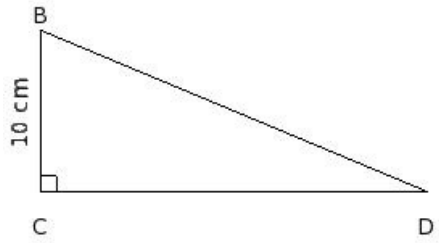
(i) $\frac{5}{13}$ (ii) $\frac{5}{11}$ (iii) $\frac{7}{13}$ (iv) $\frac{1}{3}$ (v) $\frac{3}{13}$

32. In the given figure, if $FH - GH = 2$ cm, and $FG = 10$ cm, find $\tan F$



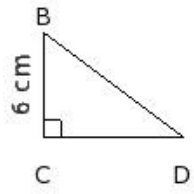
(i) $\frac{14}{5}$ (ii) 4 (iii) $\frac{12}{5}$ (iv) $\frac{12}{7}$ (v) 2

33. In the given figure, if $BD + CD = 50$ cm, and $BC = 10$ cm, find $\sin B$



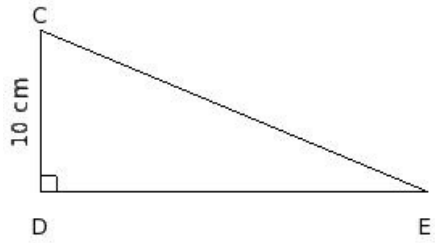
(i) $\frac{14}{13}$ (ii) $\frac{10}{13}$ (iii) $\frac{12}{11}$ (iv) $\frac{4}{5}$ (v) $\frac{12}{13}$

34. In the given figure, if $BD + CD = 18$ cm, and $BC = 6$ cm, find $\cos B$



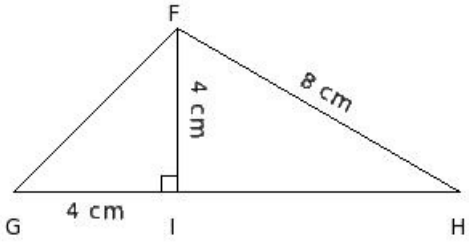
(i) $\frac{3}{7}$ (ii) 1 (iii) $\frac{3}{5}$ (iv) $\frac{1}{5}$

35. In the given figure, if $CE + DE = 50$ cm, and $CD = 10$ cm, find $\tan C$



(i) 2 (ii) $\frac{12}{5}$ (iii) 4 (iv) $\frac{14}{5}$ (v) $\frac{12}{7}$

36. The altitude FI of $\triangle FGH$ in which $\angle F$ is obtuse is 4 cm. If $GI = 4$ cm and $HI = 4\sqrt{3}$ cm, find $\angle GFH$



(i) 100° (ii) 120° (iii) 110° (iv) 115° (v) 105°

Assignment Key

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