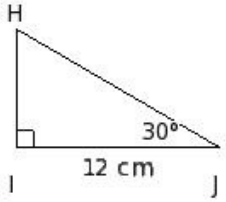
EduSahara™ Assignment

Name : Trigonometry Diagram Problems

Chapter : Trigonometrical Identities

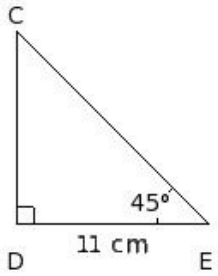
Grade : ICSE Grade X

1. In the given figure, △HIJ is right angled at I. If IJ = 12 cm and ∠J = 30°, find HI and HJ



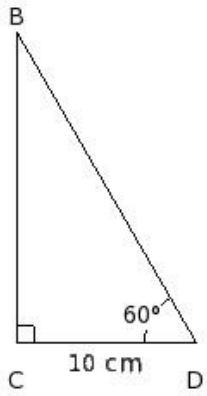
(i) $4\sqrt{3}$ cm & 27 cm (ii) $4\sqrt{3}$ cm & $8\sqrt{3}$ cm (iii) $4\sqrt{\frac{1}{3}}$ cm & 27 cm (iv) $4\sqrt{3}$ cm & 24 cm (v) $4\sqrt{3}$ cm & $8\sqrt{3}$ cm

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



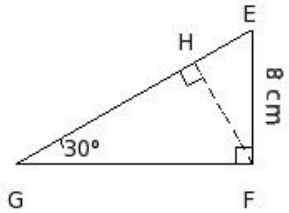
(i) 12 cm & 22 cm (ii) 11 cm & $11\sqrt{2}$ cm (iii) 12 cm & $11\sqrt{2}$ cm (iv) 10 cm & 25 cm (v) 12 cm & 25 cm

3. In the given figure, △BCD is right angled at C. If CD = 10 cm and ∠D = 60°, find BC and BD



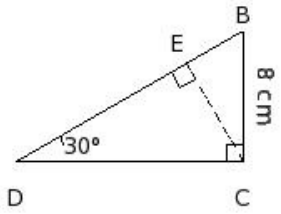
(i) $10\sqrt{3}$ cm & 20 cm (ii) $10\sqrt{3}$ cm & 22 cm (iii) $10\sqrt{3}$ cm & 20 cm (iv) $10\sqrt{3}$ cm & 19 cm (v) $10\sqrt{\frac{1}{3}}$ cm & 22 cm

4. In the given figure, △EGF is right angled at F. If EF = 8 cm and ∠G = 30°, find EG



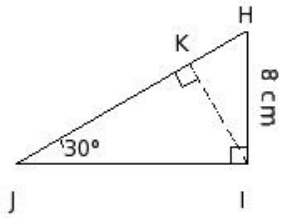
(i) 15 cm (ii) 13 cm (iii) 17 cm (iv) 18 cm (v) 16 cm

5. In the given figure, △BDC is right angled at C. If BC = 8 cm and ∠D = 30°, find CD



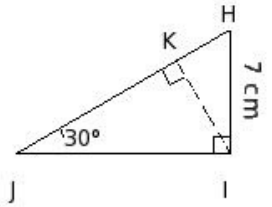
(i) $12\sqrt{2}$ cm (ii) $8\sqrt{3}$ cm (iii) 24 cm (iv) 8 cm (v) $8\sqrt{18}$ cm

6. In the given figure, △HJI is right angled at I. If HI = 8 cm and ∠J = 30°, find HK



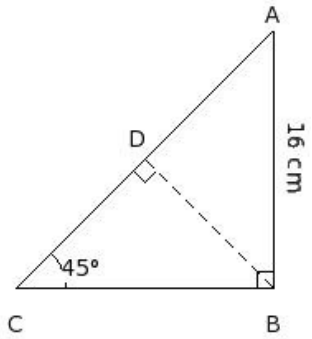
(i) 5 cm (ii) 4 cm (iii) 7 cm (iv) 2 cm (v) 3 cm

7. In the given figure, △HJI is right angled at I. If HI = 7 cm and ∠J = 30°, find JK



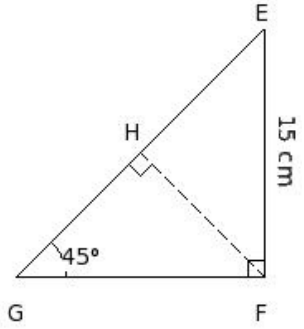
(i) $\frac{23}{2}$ cm (ii) $\frac{19}{2}$ cm (iii) 21 cm (iv) $\frac{21}{4}$ cm (v) $\frac{21}{2}$ cm

8. In the given figure, △ACB is right angled at B. If AB = 16 cm and ∠C = 45°, find AC



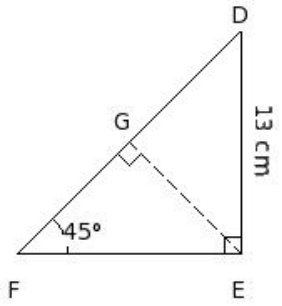
(i) 32 cm (ii) $32\sqrt{3}$ cm (iii) $16\sqrt{2}$ cm (iv) $8\sqrt{12}$ cm (v) 16 cm

9. In the given figure, △EGF is right angled at F. If EF = 15 cm and ∠G = 45°, find FG



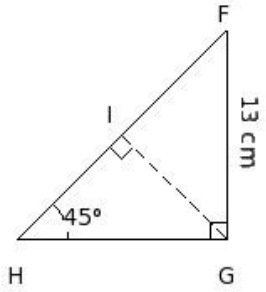
(i) 16 cm (ii) 17 cm (iii) 14 cm (iv) 15 cm (v) 13 cm

10. In the given figure, △DFE is right angled at E. If DE = 13 cm and ∠F = 45°, find DG



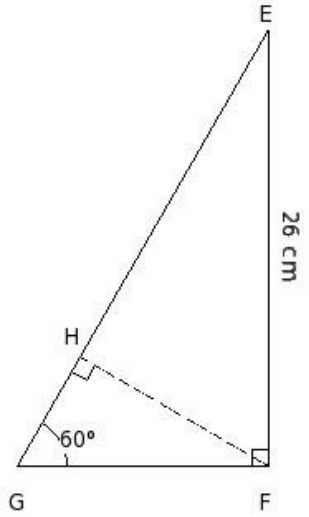
(i) $13\sqrt{3}$ cm (ii) $\frac{13}{2}\sqrt{2}$ cm (iii) $\frac{13}{4}\sqrt{12}$ cm (iv) $\frac{13}{2}$ cm (v) 13 cm

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



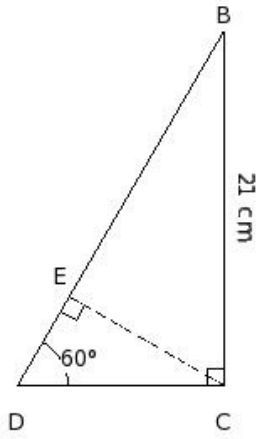
(i) $\frac{13}{4}\sqrt{12}$ cm (ii) $\frac{13}{2}$ cm (iii) 13 cm (iv) $13\sqrt{3}$ cm (v) $\frac{13}{2}\sqrt{2}$ cm

12. In the given figure, △EGF is right angled at F. If EF = 26 cm and ∠G = 60°, find EG



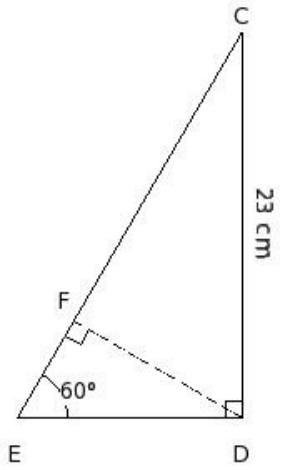
(i) $\frac{52}{3}\sqrt{3}$ cm (ii) $26\sqrt{2}$ cm (iii) 52 cm (iv) $\frac{52}{3}$ cm (v) $\frac{52}{3}\sqrt{18}$ cm

13. In the given figure, △BDC is right angled at C. If BC = 21 cm and ∠D = 60°, find CD



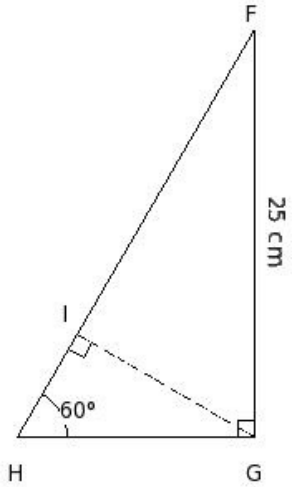
(i) $7\,\text{cm}$ (ii) $21\,\text{cm}$ (iii) $7\sqrt{18}\,\text{cm}$ (iv) $7\sqrt{3}\,\text{cm}$ (v) $\frac{21}{2}\sqrt{2}\,\text{cm}$

14. In the given figure, △CED is right angled at D. If CD = 23 cm and ∠E = 60°, find CF



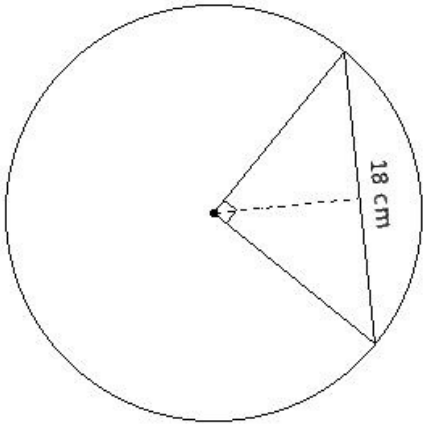
(i) $\frac{23}{2}\sqrt{18}\,\text{cm}$ (ii) $\frac{69}{4}\sqrt{2}\,\text{cm}$ (iii) $\frac{69}{2}\,\text{cm}$ (iv) $\frac{23}{2}\,\text{cm}$ (v) $\frac{23}{2}\sqrt{3}\,\text{cm}$

15. In the given figure, △FHG is right angled at G. If FG = 25 cm and ∠H = 60°, find HI



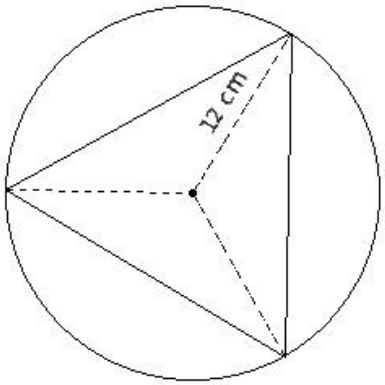
(i) $\frac{25}{2}\,\text{cm}$ (ii) $\frac{25}{6}\sqrt{3}\,\text{cm}$ (iii) $\frac{25}{6}\sqrt{18}\,\text{cm}$ (iv) $\frac{25}{4}\sqrt{2}\,\text{cm}$ (v) $\frac{25}{6}\,\text{cm}$

16. A chord of 18 cm subtends an angle of 90° at the centre. Calculate its shortest distance from the centre



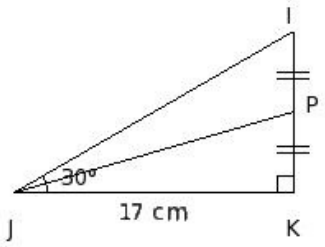
(i) 9.0 cm (ii) 7.0 cm (iii) 10.0 cm (iv) 8.0 cm (v) 11.0 cm

17. An equilateral triangle is inscribed in a circle of radius 12 cm. Find the length of its sides.



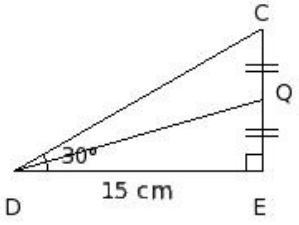
(i) 36 cm (ii) $18\sqrt{2}$ cm (iii) 12 cm (iv) $12\sqrt{3}$ cm (v) $12\sqrt{18}$ cm

18. In the given figure, △IJK is a right angle triangle with ∠K = 90° and JK = 17 cm. P is the mid-point of IK. Find PK



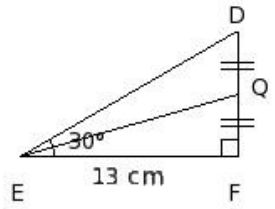
(i) $\frac{17}{4}\sqrt{2}$ cm (ii) $\frac{17}{6}\sqrt{18}$ cm (iii) $\frac{17}{6}$ cm (iv) $\frac{17}{2}$ cm (v) $\frac{17}{6}\sqrt{3}$ cm

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



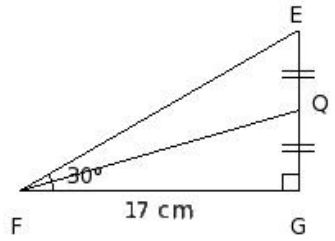
(i) 14° 6' (ii) 19° 6' (iii) 13° 6' (iv) 18° 6' (v) 16° 6'

20. In the given figure, △DEF is a right angle triangle with ∠F = 90° and EF = 13 cm. Q is the mid-point of DF. Find the length of the altitude from F to DE.



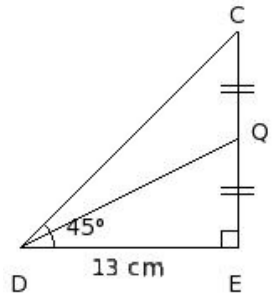
(i) 7 cm (ii) $\frac{11}{2}$ cm (iii) $\frac{15}{2}$ cm (iv) $\frac{13}{2}$ cm (v) $\frac{25}{4}$ cm

21. In the given figure, △EFG is a right angle triangle with ∠G = 90° and FG = 17 cm. Q is the mid-point of EG. Find ∠QFE using tables.



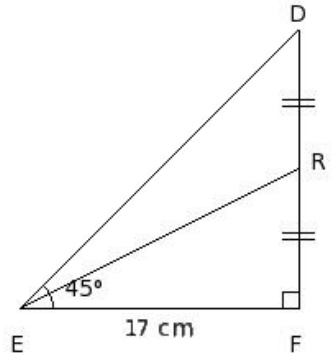
(i) 15° 54' (ii) 10° 54' (iii) 11° 54' (iv) 16° 54' (v) 13° 54'

22. In the given figure, △CDE is a right angle triangle with ∠E = 90° and DE = 13 cm. Q is the mid-point of CE. Find QE



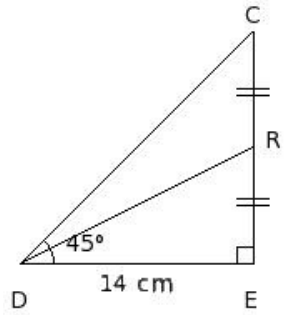
(i) $\frac{25}{4}$ cm (ii) $\frac{13}{2}$ cm (iii) $\frac{11}{2}$ cm (iv) $\frac{15}{2}$ cm (v) 7 cm

23. In the given figure, △DEF is a right angle triangle with ∠F = 90° and EF = 17 cm. R is the mid-point of DF. Find ∠REF using tables.



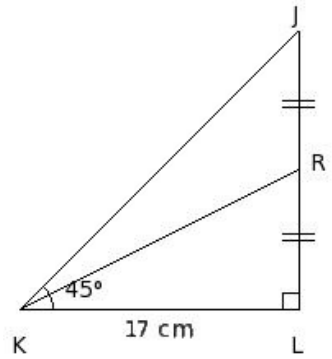
(i) 26° 34' (ii) 28° 34' (iii) 29° 34' (iv) 24° 34' (v) 23° 34'

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



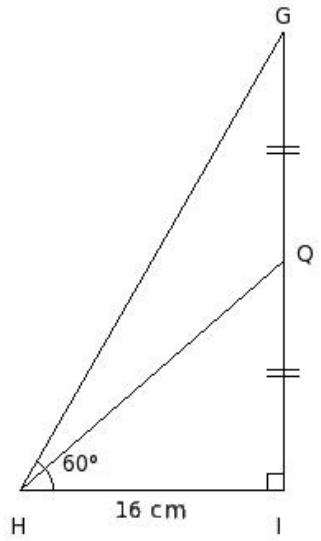
(i) $7\sqrt{2}$ cm (ii) 14 cm (iii) $14\sqrt{3}$ cm (iv) 7 cm (v) $\frac{7}{2}\sqrt{12}$ cm

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



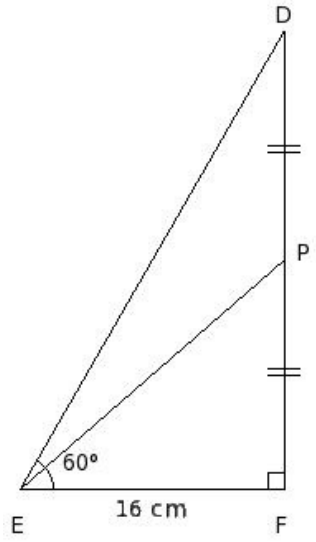
(i) 18° 26' (ii) 20° 26' (iii) 15° 26' (iv) 16° 26' (v) 21° 26'

26. In the given figure, △GHI is a right angle triangle with ∠I = 90° and HI = 16 cm. Q is the mid-point of GI. Find QI



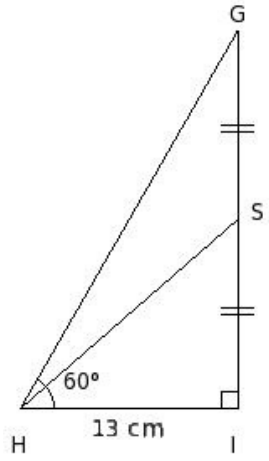
(i) $12\sqrt{2}$ cm (ii) 24 cm (iii) $8\sqrt{3}$ cm (iv) $8\sqrt{18}$ cm (v) 8 cm

27. In the given figure, △DEF is a right angle triangle with ∠F = 90° and EF = 16 cm. P is the mid-point of DF. Find ∠PEF using tables.



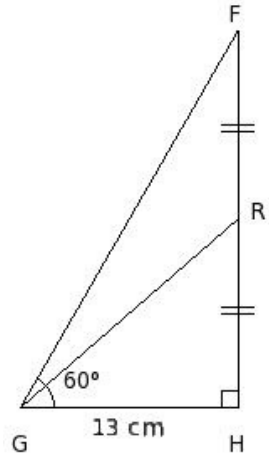
(i) 42° 53' (ii) 40° 53' (iii) 38° 53' (iv) 37° 53' (v) 43° 53'

28. In the given figure, △GHI is a right angle triangle with ∠I = 90° and HI = 13 cm. S is the mid-point of GI. Find the length of the altitude from I to GH.



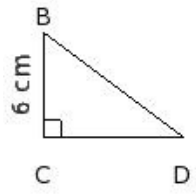
(i) $\frac{13}{2}$ cm (ii) $\frac{39}{2}$ cm (iii) $\frac{13}{2}\sqrt{3}$ cm (iv) $\frac{13}{2}\sqrt{18}$ cm (v) $\frac{39}{4}\sqrt{2}$ cm

29. In the given figure, △FGH is a right angle triangle with ∠H = 90° and GH = 13 cm. R is the mid-point of FH. Find ∠RGF using tables.



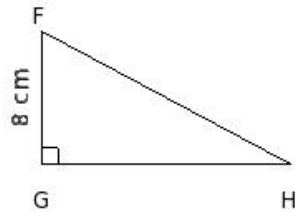
(i) 17° 7' (ii) 22° 7' (iii) 19° 7' (iv) 21° 7' (v) 16° 7'

30. In the given figure, if $BD - CD = 2$ cm, and $BC = 6$ cm, find $\sin B$



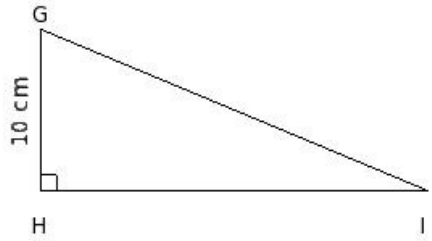
(i) $\frac{4}{7}$ (ii) $\frac{6}{5}$ (iii) $\frac{4}{5}$ (iv) $\frac{2}{5}$ (v) $\frac{4}{3}$

31. In the given figure, if $FH - GH = 2$ cm, and $FG = 8$ cm, find $\cos F$



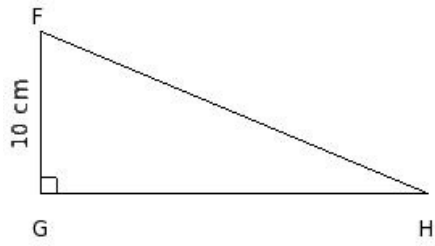
(i) $\frac{8}{19}$ (ii) $\frac{6}{17}$ (iii) $\frac{8}{17}$ (iv) $\frac{10}{17}$ (v) $\frac{8}{15}$

32. In the given figure, if $GI - HI = 2$ cm, and $GH = 10$ cm, find $\tan G$



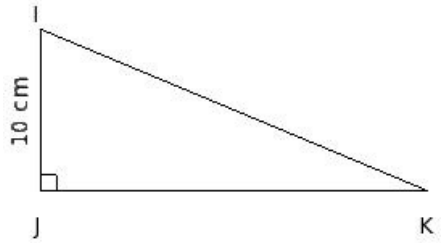
(i) $\frac{12}{7}$ (ii) 4 (iii) 2 (iv) $\frac{14}{5}$ (v) $\frac{12}{5}$

33. In the given figure, if $FH + GH = 50$ cm, and $FG = 10$ cm, find $\sin F$



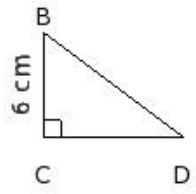
(i) $\frac{10}{13}$ (ii) $\frac{14}{13}$ (iii) $\frac{4}{5}$ (iv) $\frac{12}{13}$ (v) $\frac{12}{11}$

34. In the given figure, if $IK + JK = 50$ cm, and $IJ = 10$ cm, find $\cos I$



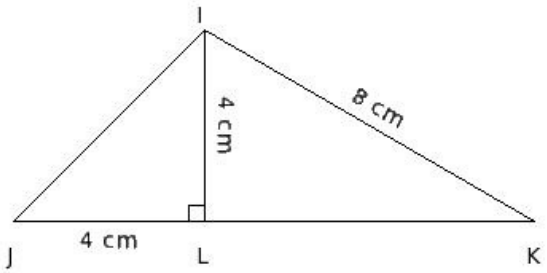
(i) $\frac{5}{11}$ (ii) $\frac{5}{13}$ (iii) $\frac{7}{13}$ (iv) $\frac{3}{13}$ (v) $\frac{1}{3}$

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



(i) $\frac{4}{3}$ (ii) 4 (iii) $\frac{2}{3}$ (iv) 2 (v) $\frac{4}{5}$

36. The altitude IL of $\triangle IJK$ in which $\angle I$ is obtuse is 4 cm. If $JL = 4$ cm and $KL = 4\sqrt{3}$ cm, find $\angle JIK$



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

Assignment Key

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