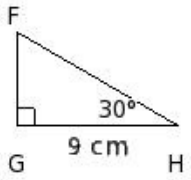
EduSahara™ Assignment

Name : Trigonometry Diagram Problems

Chapter : Introduction to Trigonometry

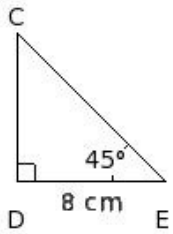
Grade : CBSE Grade X

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



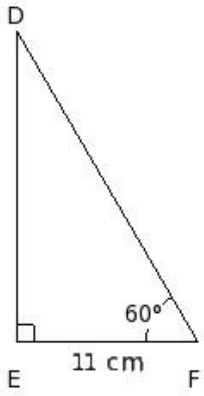
(i) $3\sqrt{3}$ cm & $6\sqrt{3}$ cm (ii) $3\sqrt{3}$ cm & 18 cm (iii) $3\sqrt{3}$ cm & $6\sqrt{3}$ cm (iv) $3\sqrt{3}$ cm & 21 cm (v) 3 cm & 21 cm

2. In the given figure, △CDE is right angled at D. If DE = 8 cm and ∠E = 45°, find CD and CE



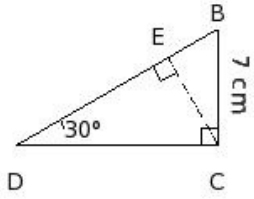
(i) 7 cm & 18 cm (ii) 9 cm & $8\sqrt{2}$ cm (iii) 9 cm & 16 cm (iv) 9 cm & 18 cm (v) 8 cm & $8\sqrt{2}$ cm

3. In the given figure, △DEF is right angled at E. If EF = 11 cm and ∠F = 60°, find DE and DF



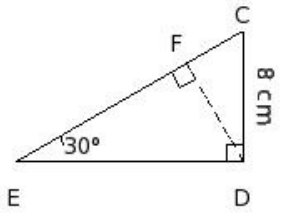
(i) $11\sqrt{3}$ cm & 22 cm (ii) $11\sqrt{\frac{1}{3}}$ cm & 24 cm (iii) $11\sqrt{3}$ cm & 22 cm (iv) $11\sqrt{3}$ cm & 21 cm (v) $11\sqrt{3}$ cm & 24 cm

4. In the given figure, △BDC is right angled at C. If BC = 7 cm and ∠D = 30°, find BD



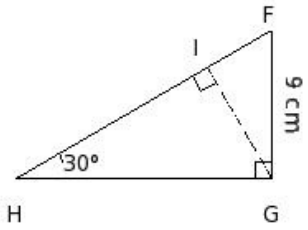
(i) 13 cm (ii) 15 cm (iii) 17 cm (iv) 14 cm (v) 11 cm

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



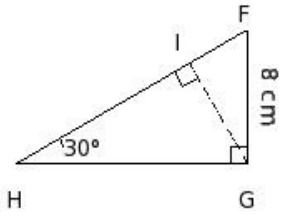
(i) $8\sqrt{18}$ cm (ii) $8\sqrt{3}$ cm (iii) 8 cm (iv) 24 cm (v) $12\sqrt{2}$ cm

6. In the given figure, △FHG is right angled at G. If FG = 9 cm and ∠H = 30°, find FI



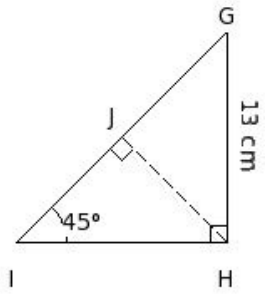
(i) $\frac{11}{2}$ cm (ii) $\frac{7}{2}$ cm (iii) $\frac{9}{2}$ cm (iv) 5 cm (v) $\frac{17}{4}$ cm

7. In the given figure, △FHG is right angled at G. If FG = 8 cm and ∠H = 30°, find HI



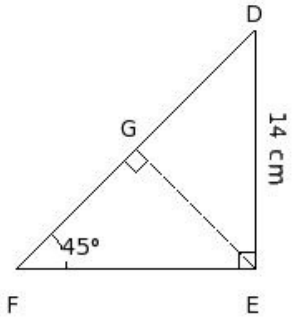
(i) 11 cm (ii) 9 cm (iii) 15 cm (iv) 12 cm (v) 13 cm

8. In the given figure, △GIH is right angled at H. If GH = 13 cm and ∠I = 45°, find GI



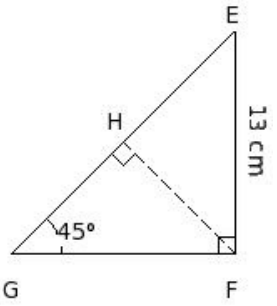
(i) $13\sqrt{2}$ cm (ii) $\frac{13}{2}\sqrt{12}$ cm (iii) 13 cm (iv) $26\sqrt{3}$ cm (v) 26 cm

9. In the given figure, △DFE is right angled at E. If DE = 14 cm and ∠F = 45°, find EF



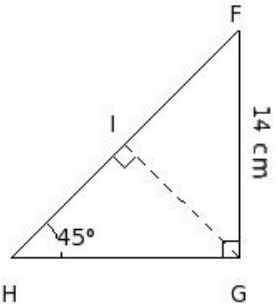
(i) 14 cm (ii) 12 cm (iii) 13 cm (iv) 17 cm (v) 15 cm

10. In the given figure, △EGF is right angled at F. If EF = 13 cm and ∠G = 45°, find EH



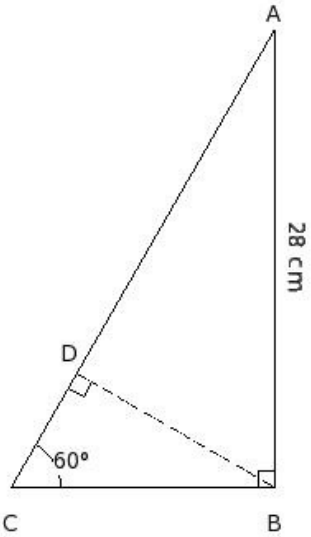
(i) $13\,\text{cm}$ (ii) $13\sqrt{3}\,\text{cm}$ (iii) $\frac{13}{2}\,\text{cm}$ (iv) $\frac{13}{4}\sqrt{12}\,\text{cm}$ (v) $\frac{13}{2}\sqrt{2}\,\text{cm}$

11. In the given figure, △FHG is right angled at G. If FG = 14 cm and ∠H = 45°, find HI



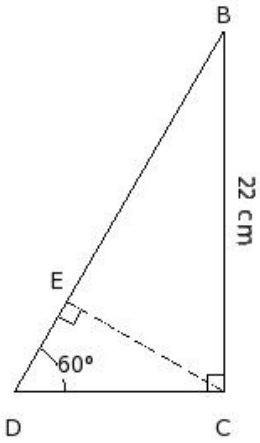
(i) $14\sqrt{3}\,\text{cm}$ (ii) $14\,\text{cm}$ (iii) $\frac{7}{2}\sqrt{12}\,\text{cm}$ (iv) $7\sqrt{2}\,\text{cm}$ (v) $7\,\text{cm}$

12. In the given figure, △ACB is right angled at B. If AB = 28 cm and ∠C = 60°, find AC



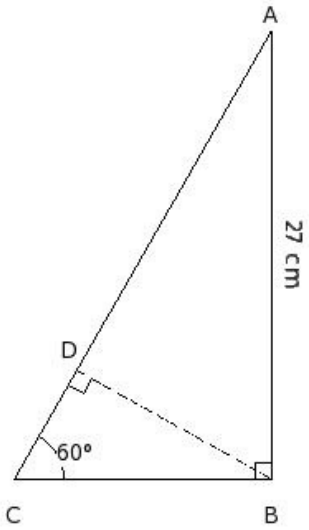
(i) $56\,\text{cm}$ (ii) $\frac{56}{3}\,\text{cm}$ (iii) $\frac{56}{3}\sqrt{18}\,\text{cm}$ (iv) $\frac{56}{3}\sqrt{3}\,\text{cm}$ (v) $28\sqrt{2}\,\text{cm}$

13. In the given figure, △BDC is right angled at C. If BC = 22 cm and ∠D = 60°, find CD



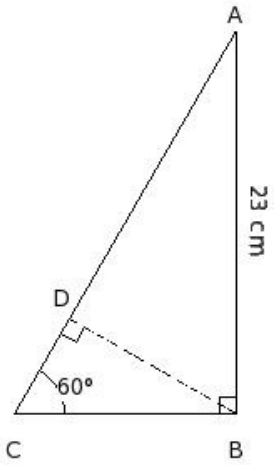
(i) $\frac{22}{3}\sqrt{3}$ cm (ii) $\frac{22}{3}$ cm (iii) 22 cm (iv) $11\sqrt{2}$ cm (v) $\frac{22}{3}\sqrt{18}$ cm

14. In the given figure, △ACB is right angled at B. If AB = 27 cm and ∠C = 60°, find AD



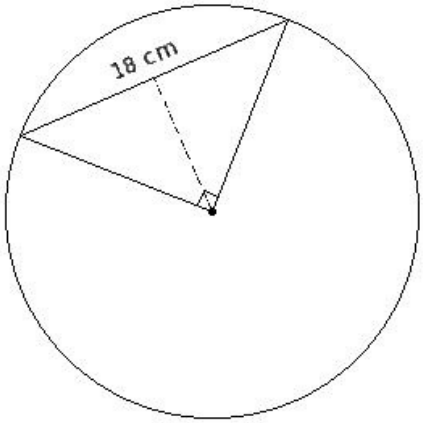
(i) $\frac{81}{4}\sqrt{2}$ cm (ii) $\frac{27}{2}$ cm (iii) $\frac{81}{2}$ cm (iv) $\frac{27}{2}\sqrt{3}$ cm (v) $\frac{27}{2}\sqrt{18}$ cm

15. In the given figure, △ACB is right angled at B. If AB = 23 cm and ∠C = 60°, find CD



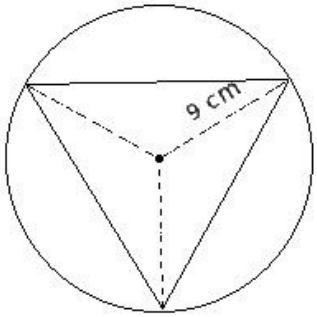
(i) $\frac{23}{4}\sqrt{2}$ cm (ii) $\frac{23}{6}$ cm (iii) $\frac{23}{6}\sqrt{3}$ cm (iv) $\frac{23}{2}$ cm (v) $\frac{23}{6}\sqrt{18}$ cm

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



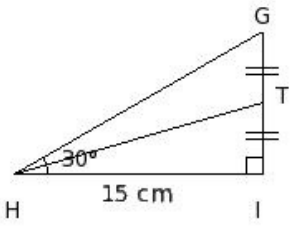
(i) 7.0 cm (ii) 11.0 cm (iii) 8.0 cm (iv) 10.0 cm (v) 9.0 cm

17. An equilateral triangle is inscribed in a circle of radius 9 cm. Find the length of its sides.



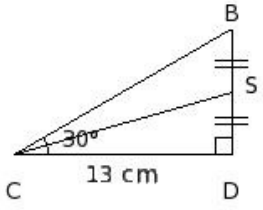
(i) $9\sqrt{18}$ cm (ii) $9\sqrt{3}$ cm (iii) $\frac{27}{2}\sqrt{2}$ cm (iv) 27 cm (v) 9 cm

18. In the given figure, △GHI is a right angle triangle with ∠I = 90° and HI = 15 cm. T is the mid-point of GI. Find TI



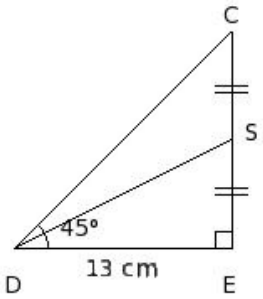
(i) $\frac{5}{2}\sqrt{18}$ cm (ii) $\frac{5}{2}$ cm (iii) $\frac{15}{4}\sqrt{2}$ cm (iv) $\frac{5}{2}\sqrt{3}$ cm (v) $\frac{15}{2}$ cm

19. In the given figure, △BCD is a right angle triangle with ∠D = 90° and CD = 13 cm. S is the mid-point of BD. Find the length of the altitude from D to BC.



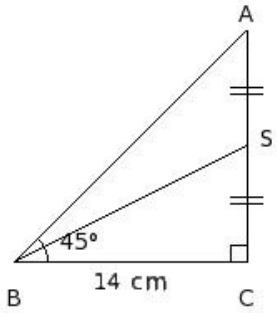
(i) $\frac{11}{2}$ cm (ii) $\frac{25}{4}$ cm (iii) 7 cm (iv) $\frac{13}{2}$ cm (v) $\frac{15}{2}$ cm

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



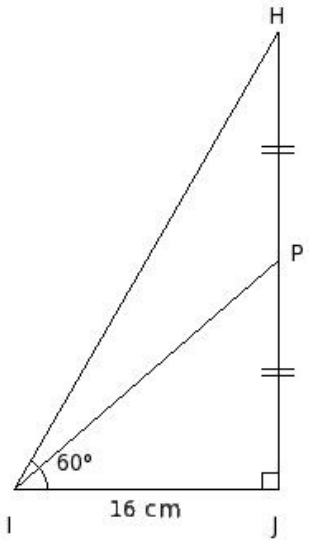
(i) 7 cm (ii) $\frac{25}{4}$ cm (iii) $\frac{15}{2}$ cm (iv) $\frac{11}{2}$ cm (v) $\frac{13}{2}$ cm

21. In the given figure, △ABC is a right angle triangle with ∠C = 90° and BC = 14 cm. S is the mid-point of AC. Find the length of the altitude from C to AB.



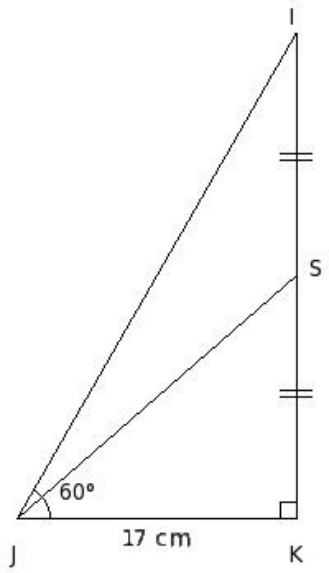
(i) $14\sqrt{3}$ cm (ii) 14 cm (iii) $7\sqrt{2}$ cm (iv) $\frac{7}{2}\sqrt{12}$ cm (v) 7 cm

22. In the given figure, △HIJ is a right angle triangle with ∠J = 90° and IJ = 16 cm. P is the mid-point of HJ. Find PJ



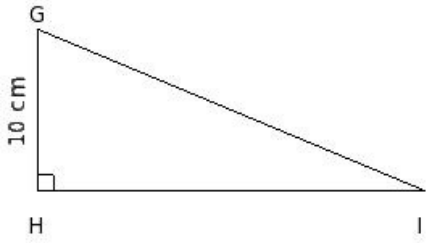
(i) 24 cm (ii) $12\sqrt{2}$ cm (iii) $8\sqrt{3}$ cm (iv) $8\sqrt{18}$ cm (v) 8 cm

23. In the given figure, △IJK is a right angle triangle with ∠K = 90° and JK = 17 cm. S is the mid-point of IK. Find the length of the altitude from K to IJ.



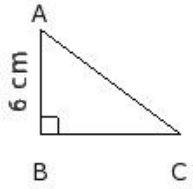
(i) $\frac{17}{2}\sqrt{18}$ cm (ii) $\frac{17}{2}$ cm (iii) $\frac{17}{2}\sqrt{3}$ cm (iv) $\frac{51}{4}\sqrt{2}$ cm (v) $\frac{51}{2}$ cm

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



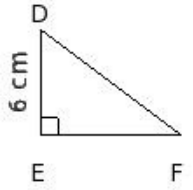
(i) $\frac{12}{13}$ (ii) $\frac{14}{13}$ (iii) $\frac{4}{5}$ (iv) $\frac{12}{11}$ (v) $\frac{10}{13}$

25. In the given figure, if $AC - BC = 2$ cm, and $AB = 6$ cm, find $\cos A$



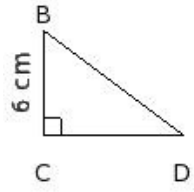
(i) $\frac{1}{5}$ (ii) $\frac{3}{7}$ (iii) $\frac{3}{5}$ (iv) 1

26. In the given figure, if $DF - EF = 2$ cm, and $DE = 6$ cm, find $\tan D$



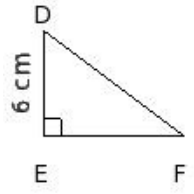
(i) $\frac{4}{3}$ (ii) 4 (iii) $\frac{4}{5}$ (iv) $\frac{2}{3}$ (v) 2

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



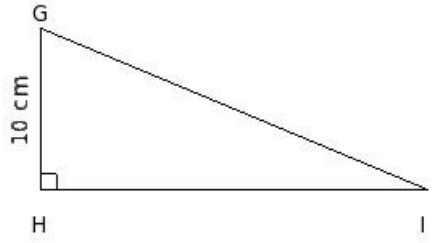
(i) $\frac{6}{5}$ (ii) $\frac{4}{5}$ (iii) $\frac{4}{3}$ (iv) $\frac{2}{5}$ (v) $\frac{4}{7}$

28. In the given figure, if $DF + EF = 18$ cm, and $DE = 6$ cm, find $\cos D$



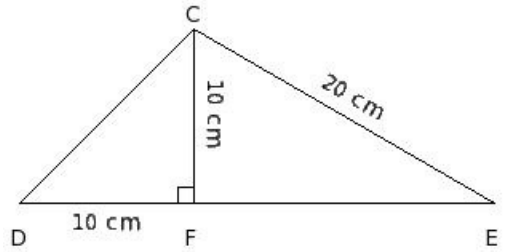
(i) $\frac{1}{5}$ (ii) 1 (iii) $\frac{3}{5}$ (iv) $\frac{3}{7}$

29. In the given figure, if $GI + HI = 50$ cm, and $GH = 10$ cm, find $\tan G$



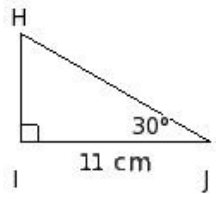
(i) $\frac{12}{5}$ (ii) $\frac{12}{7}$ (iii) 2 (iv) 4 (v) $\frac{14}{5}$

30. The altitude CF of $\triangle CDE$ in which $\angle C$ is obtuse is 10 cm. If $DF = 10$ cm and $EF = 10\sqrt{3}$ cm, find $\angle DCE$



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

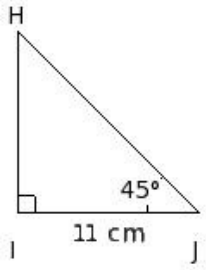
31. In the given figure, $\triangle HIJ$ is right angled at I. If IJ = 11 cm and $\angle J = 30°$, find HI and HJ



(i) $\frac{11}{3}\sqrt{3}$ cm & 22 cm (ii) $\frac{11}{3}\sqrt{3}$ cm & $\frac{22}{3}\sqrt{3}$ cm (iii) $\frac{11}{3}\sqrt{3}$ cm & 24 cm (iv) $\frac{11}{3}\sqrt{3}$ cm & $\frac{22}{3}\sqrt{3}$ cm

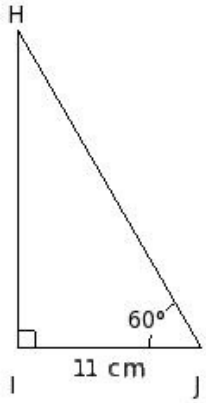
(v) $\frac{11}{3}\sqrt{\frac{1}{3}}$ cm & 24 cm

32. In the given figure, △HIJ is right angled at I. If IJ = 11 cm and ∠J = 45°, find HI and HJ



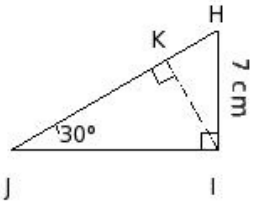
(i) $12\,\text{cm} \,\&\, 11\sqrt{2}\,\text{cm}$ (ii) $11\,\text{cm} \,\&\, 11\sqrt{2}\,\text{cm}$ (iii) $12\,\text{cm} \,\&\, 24\,\text{cm}$ (iv) $12\,\text{cm} \,\&\, 22\,\text{cm}$ (v) $9\,\text{cm} \,\&\, 24\,\text{cm}$

33. In the given figure, △HIJ is right angled at I. If IJ = 11 cm and ∠J = 60°, find HI and HJ



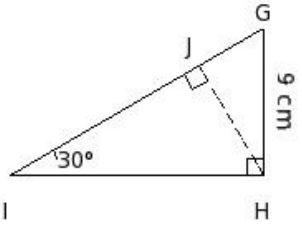
(i) $11\sqrt[4]{3}\,\text{cm} \,\&\, 22\,\text{cm}$ (ii) $11\,\text{cm} \,\&\, 24\,\text{cm}$ (iii) $11\sqrt[4]{3}\,\text{cm} \,\&\, 21\,\text{cm}$ (iv) $11\sqrt{3}\,\text{cm} \,\&\, 22\,\text{cm}$ (v) $11\sqrt[4]{3}\,\text{cm} \,\&\, 24\,\text{cm}$

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



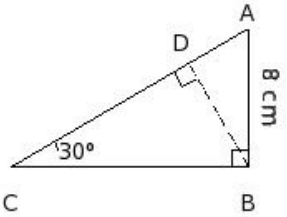
(i) 13 cm (ii) 15 cm (iii) 17 cm (iv) 11 cm (v) 14 cm

35. In the given figure, △GIH is right angled at H. If GH = 9 cm and ∠I = 30°, find HI



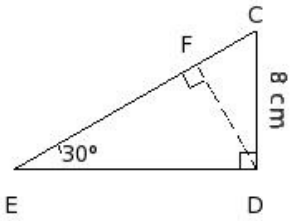
(i) $9\sqrt{3}\,\text{cm}$ (ii) 27 cm (iii) $\frac{27}{2}\sqrt{2}\,\text{cm}$ (iv) $9\sqrt{18}\,\text{cm}$ (v) 9 cm

36. In the given figure, △ACB is right angled at B. If AB = 8 cm and ∠C = 30°, find AD



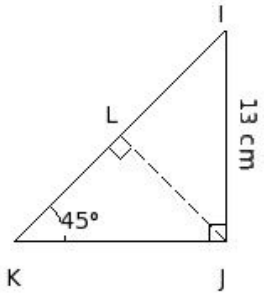
(i) 6 cm (ii) 4 cm (iii) 5 cm (iv) 3 cm (v) 1 cm

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



(i) 11 cm (ii) 10 cm (iii) 13 cm (iv) 12 cm (v) 15 cm

38. In the given figure, △IKJ is right angled at J. If IJ = 13 cm and ∠K = 45°, find IK



(i) 13 cm (ii) $13\sqrt{2}$ cm (iii) $\frac{13}{2}\sqrt{12}$ cm (iv) 26 cm (v) $26\sqrt{3}$ cm

Assignment Key

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