**KIRAN TUTORIALS** **Seat No.** | | | | | | | | |

**Std 10 (English)** **Mathematics Part - II**

| **Time 1HRS** | **Chapter 6th chp** | **Marks 20** |
|---|---|---|

**Q.1** **Multiple Choice Questions** **1**

**1** $\frac{\tan^2\theta}{1 + \tan^2\theta}$ is equal to

a. $2\sin^2\theta$ b. $2\cos^2\theta$ c. $\sin^2\theta$ d. $\cos^2\theta$

**Q.2** **Answer the following.** **1**

**1** Prove the following

$\cos^2\theta\ (1 + \tan^2\theta) = 1$

**Q.3** **Answer the following (Any One)** **2**

**1** Prove the following

$\frac{\tan^3\theta - 1}{\tan\theta - 1} = \sec^2\theta + \tan\theta$

**2** Prove that $\sec\theta + \tan\theta = \frac{\cos\theta}{1-\sin\theta}$

**Q.4** **Solve the following** **6**

**1** Prove the following

$\text{Cot}^2\theta - \tan^2\theta = \text{cosec}^2\theta - \sec^2\theta$

**2** Prove that $\frac{\sin\theta - 2\sin^3\theta}{2\cos^3\theta - \cos\theta} = \tan\theta$

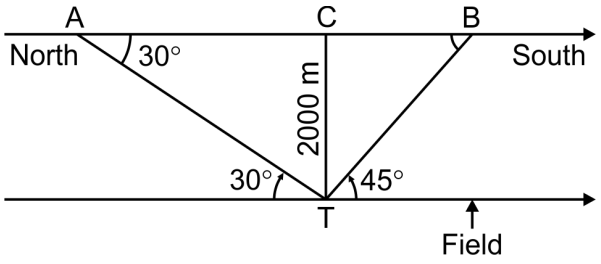
**Q.5** **Answer the following(Any One)** **4**

**1** Two poles of height 18 meters and 7 meters are erected on the ground. A wire of length 22 metres ties the two tops of poles. Find the angle made by the wire the horizontal.

**2** Two buildings are facing each other on a road of width 12 metre. From the top of the first building, which is 10 metre high, the angle of elevation of the top of the second is found to be 60°. What is the height of the second building ?

**Q.6** **Creative questions** **3**

**1** Construct a trigonometry word problem (find speed) by looking at the figure . Solve the problem you have constructed.




**Q.7** **Answer the following (Any One)** **3**

**1** An observer at a distance of 10 m from a tree looks at the top of the tree, the angle of elevation is 60°. What is the height of the tree? ($\sqrt{3}$ = 1.73)

**2** Prove the following.

$$\frac{1}{\sin A + \cos A + 1} + \frac{1}{\sin A + \cos A - 1} = \sec A + \operatorname{cosec} A$$

YOUR FLIGHT , OUR WINGS.