

Problem 1

Five numbers are arranged in increasing order. As they get larger the difference between adjacent numbers doubles. The average of the five numbers is 11 more than the middle number. The sum of the second and the fourth numbers is equal to the largest number. What is the largest number?

Problem 2

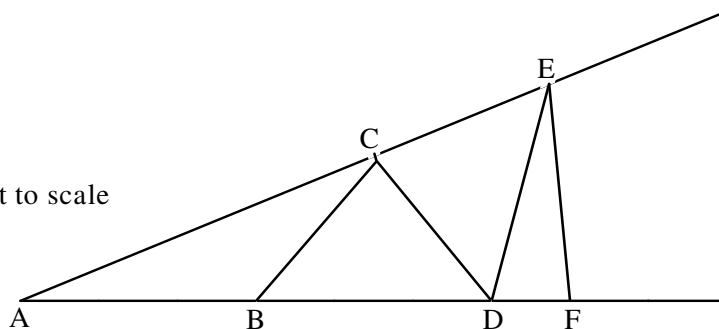
The houses and trees in the diagram are all in a straight line. In each of the six houses lives a child. At which tree should the children meet so that the sum of the distances they walk is minimum?



Problem 3

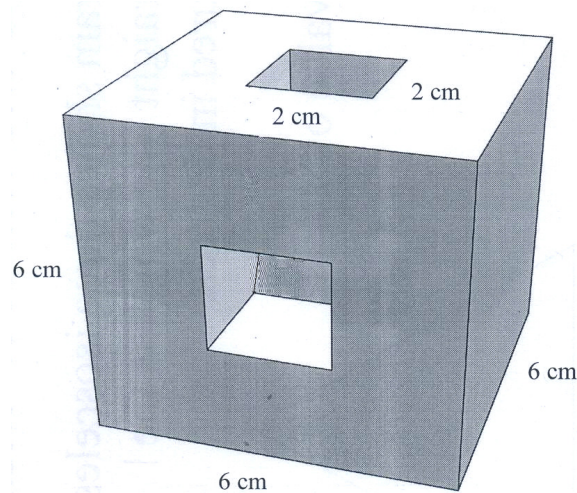
If $AB = BC = CD = DE = EF$ and angle $AEF = 75^\circ$, what is the size of angle EAF ?

Diagram not to scale



Problem 4

Two identical square-shaped holes have been drilled passing all the way through a solid cube, as shown. The holes are in the centres of the faces of the cube. What is the total surface area of the resulting solid?



Problem 5

Five men are crossing a rickety old bridge in the dark, strong enough to hold only two men. They have only one flashlight. Each man travels at a different speed. Anuj takes one minute to cross, Mohan takes two, Chetan takes 5, David takes 7, and Eshan takes 10. Traveling together, two men can only go as fast as the slower man. What is the shortest amount of time all five men can take to reach the other side of the bridge?