King Fahd University of Petroleum and Minerals

Prep-Year Math Program

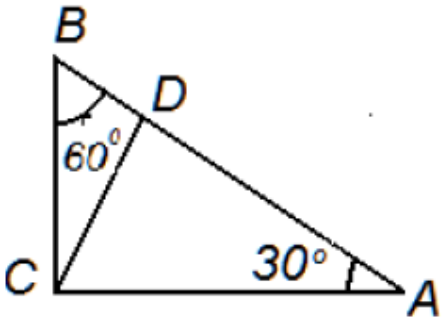
Math 002 - Term 132

Recitation (5.4)

Question 1: A man from a point A finds that the angle of elevation to the top of a tree is $60°$. He then moves back 40 feet to a point B and finds the angle of elevation to the top of the tree is $30°$. The height of the tree is

A) $20\sqrt{3}$ *feet* B) $30\sqrt{3}$ *feet* C) $20\sqrt{3}+10$ *feet* D) $30\sqrt{3}-10$ *feet* E) 60 *feet*

Question 2: In the right triangle shown in the figure, if the length of *AC* is 4 cm, find the exact length of *BD*.



Answer: $BD = \frac{2\sqrt{3}}{3}$ cm

Question 3:

A ladder of 6 meters length is placed against a wall forms an angle of 30° with the ground. If the foot of the ladder is moved towards the wall, the angle changed to 45°. The exact distance moved by the top of the ladder on the wall is

A) $3\left(\sqrt{2}-1\right)$

B) $2\left(\sqrt{3}-1\right)$

C) $2-\sqrt{3}$

D) $4-\sqrt{3}$

E) $2\left(\sqrt{3}+1\right)$

Answer: $3\left(\sqrt{2}-1\right)$ meters

Question 4: The angle of depression to an object A on one side of a road, measured from a balloon 2500 feet above the road, is $45°$. The angle of depression to an object B on the opposite side of the road is $30°$. Find the distance between A and B.

Answer: Distance between A and B is $2500\left(\sqrt{3}+1\right)ft$