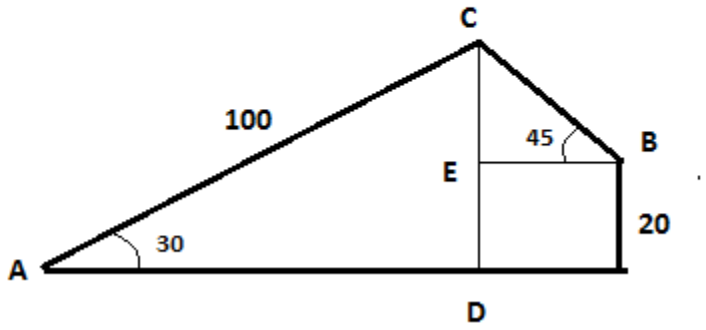
Answer on Question #49756 – Math – Trigonometry

A boy standing on a horizontal plane finds a bird flying at a distance of 100m from him at an elevation of 30 degree . a girl on the roof of 20 m high building finds the angle of elevation of the same bird to be 45 degree. both the girl and the boy are on the opposite sides of the bird . find the distance of the bird from the girl

Solution.



$$CD = ACsin30^0 = 100 * \frac{1}{2} = 50\ m,\ ED=20$$

$$CE = CD - ED = CD - 20 = 50 - 20 = 30\ m.$$

$$BC = \frac{CE}{sin45^0} = 30\sqrt{2} \approx 42.4\ m.$$