1. A 52 m ladder leans against a vertical wall; its foot is pulled 20 m away from the wall, and the top slides down 16 m along the wall. The new angle with the ground is  
   (A) 30°  
   (B) 35°  
   (C) 40°  
   (D) 45°
2. A ladder rests against a wall at an angle θ with the ground; the foot is 24 m from the wall, and the top is 7 m below the top of the 25 m wall. The length of the ladder is  
   (A) 25 m  
   (B) 26 m  
   (C) 27 m  
   (D) 28 m
3. A ladder of length L makes angles α and β with the ground when leaning against two perpendicular walls meeting at a corner from the same point on the floor. If the two foot positions are 9 m and 12 m from the corner along the adjacent walls, then L equals  
   (A) 15 m  
   (B) 18 m  
   (C) 20 m  
   (D) 21 m
4. A ladder of length 40√5 m touches a wall at height h when the angle with the ground is 30°. If the foot is moved 10 m closer to the wall, the top rises by 5 m. The new angle is  
   (A) 36.87°  
   (B) 45°  
   (C) 53.13°  
   (D) 60°
5. A ladder just reaches the top of a 48 m wall when inclined at θ with the ground; increasing θ by 15° raises the top by 16 m. The length of the ladder is  
   (A) 65 m  
   (B) 68 m  
   (C) 70 m  
   (D) 72 m
6. A ladder of length 50 m has its foot on level ground and top against a wall. If the ladder makes angle θ with the wall (so with ground it is 90°−θ) and sinθ = 3/5, the distance of the foot from the wall is  
   (A) 20 m  
   (B) 24 m  
   (C) 30 m  
   (D) 40 m
7. Two ladders of equal length L lean to opposite faces of a corridor of width 12 m and height 16 m, crossing each other at 8 m above the floor. The common length L is  
   (A) 20 m  
   (B) 24 m  
   (C) 25 m  
   (D) 26 m
8. A ladder of length 2a rests against a vertical wall; the distance of the foot from the wall is x and the top is at height y with x + y = 3a. Then the angle the ladder makes with the ground is closest to  
   (A) 30°  
   (B) 37°  
   (C) 45°  
   (D) 53°
9. A ladder is placed so that its top touches a wall 3 m below the roof of a 50 m building, and the foot is 14 m from the wall. If the ladder is extended by 10 m and its foot moved 6 m closer, it just reaches the roof. The original length was  
   (A) 41 m  
   (B) 43 m  
   (C) 45 m  
   (D) 47 m
10. A ladder stands on a slope that rises uniformly at 1 vertical to 4 horizontal away from the wall. If the ladder length is 65 m and it touches the wall at height 60 m, the horizontal distance from the wall to the foot measured along level ground is  
    (A) 11 m  
    (B) 12 m  
    (C) 13 m  
    (D) 15 m