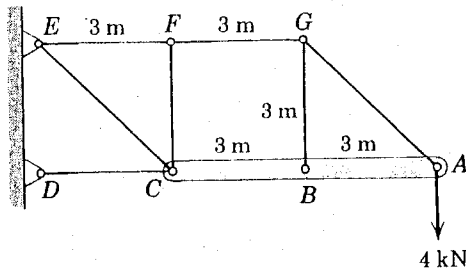1. A transmission cable AB exerts a 2500 N force on the pole in the direction of the tangent to the cable at A. Determine the required tension T in the guy wire AC if the resultant of the two forces t A is to be vertical. Find the magnitude R of the resultant. (25%)
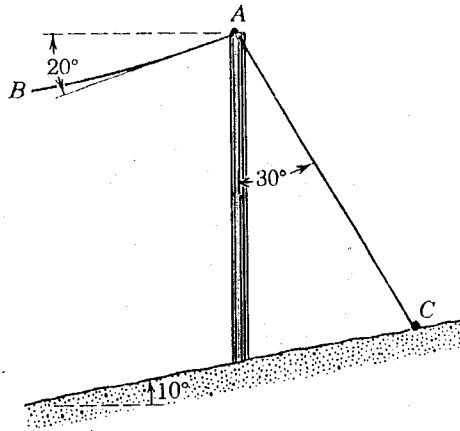
2. Calculate the force in member BG using a free body diagram of the rigid member ABC. (25%)

3. During its final approach to the runway, the aircraft speed is reduced from 300 km/h at A to 200 km/h at B. Determine the net external aerodynamic force R which acts on the 200-Mg aircraft during this interval. (25%)
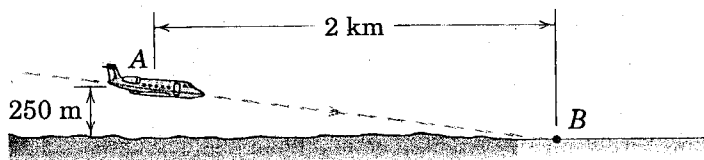
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4. The magnitude of the absolute velocity of point A on the automobile tire is 12 m/s when A is in the position shown. What are the corresponding velocity v_O of the car and the angular velocity ω of the wheel? (The wheel rolls without slipping.)　　(25%)