**7. Questions:**

1. A shop sign weighing 215 N is supported by a uniform 135-N beam shown in the figure below. Find the tension in the guy wire and the horizontal and the vertical forces exerted by the pin on the beam.

**30 o**

**1.35 m**

**1.7 m**

**AUTOMALL**

2. A beam balances 30.0 cm from one end. When a 0.75 kg mass is hung from that end, the balance point moves 8.0 cm toward that end. Find the mass of the beam.

3. A 1.0-m radius flywheel is to be made from steel in the form of a solid disc. If the flywheel when turning at 60 rpm store as much energy as a 100-W lamp uses in one minute, how thick must the flywheel be if the density of steel is 7880 kg.m-3.

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