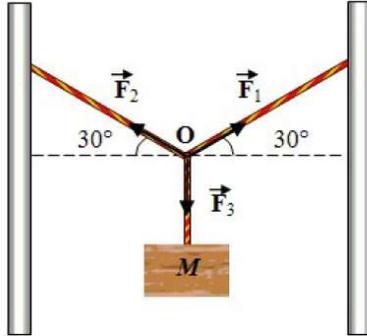14. A block of mass M is hung by ropes as shown. The system is in equilibrium. The point O represents the knot, the junction of the three ropes. Which of the following statements is true concerning the magnitudes of the three forces in equilibrium?

A) $F_1 = F_2 = F_3$

B) $F_2 = 2F_3$

C) $F_2 < F_3$

D) $F_1 = F_2 = \dfrac{F_3}{2}$

E) $F_1 > F_3$

If the street light weighs 100N, what is the tension in the two Lines?

Just some of the forces are shown here.

T_1

T_2

T_1 T_2

30° T_1 T_2 45°

W

(b)
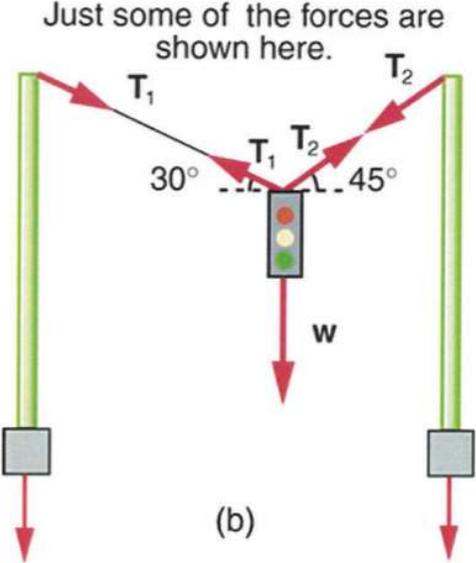
*110. **GO** A mountain climber, in the process of crossing between two cliffs by a rope, pauses to rest. She weighs 535 N. As the drawing shows, she is closer to the left cliff than to the right cliff, with the result that the tensions in the left and right sides of the rope are not the same. Find the tensions in the rope to the left and to the right of the mountain climber.