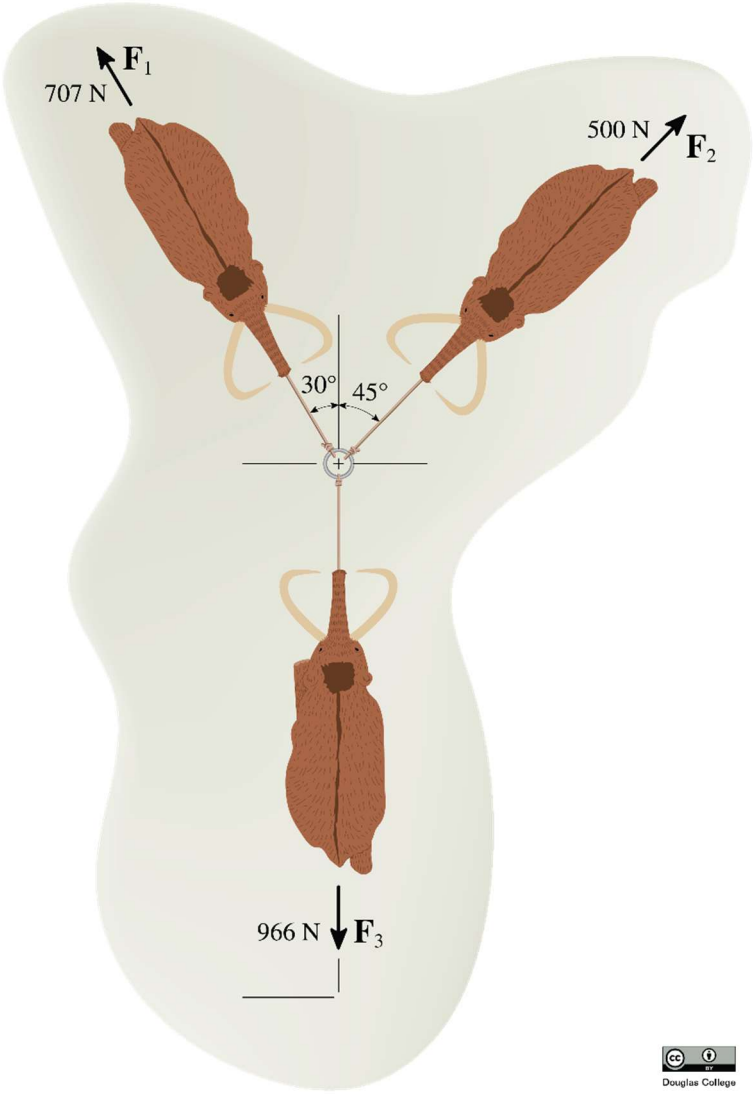
21-S-3-3-AG-057



Is the above system in equilibrium?

ANSWER:

To find if the system is in equilibrium, we must find out if the forces balance.

$$\sum F_y = 707N \cdot \cos(30°) + 500N \cdot \cos(45°) - 966N = 0$$

$$\sum F_x = -707N \cdot \sin(30°) + 500N \cdot \sin(45°) = 0$$

Since the forces balance in both the arbitrary x and y directions, the system is in equilibrium.