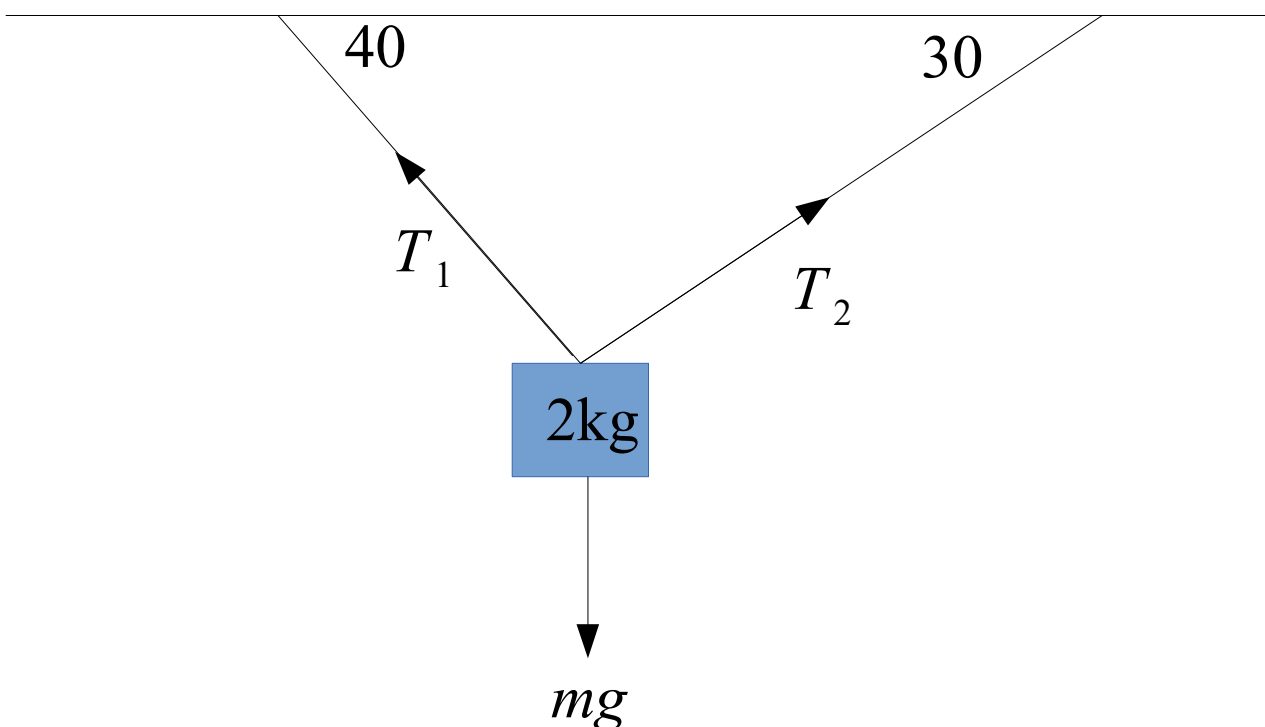


Statics

If an object is in equilibrium all forces in all directions must be equal

Forces up = Forces down
Forces Left = Forces right



$$\text{Forces left} = \text{Forces right}$$
$$T_1 \cos(40) = T_2 \cos(30)$$

$$\text{Forces up} = \text{Forces down}$$
$$T_1 \sin(40) + T_2 \sin(30) = 2g$$

(We can find T_1 and T_2 by solving the simultaneous equations)