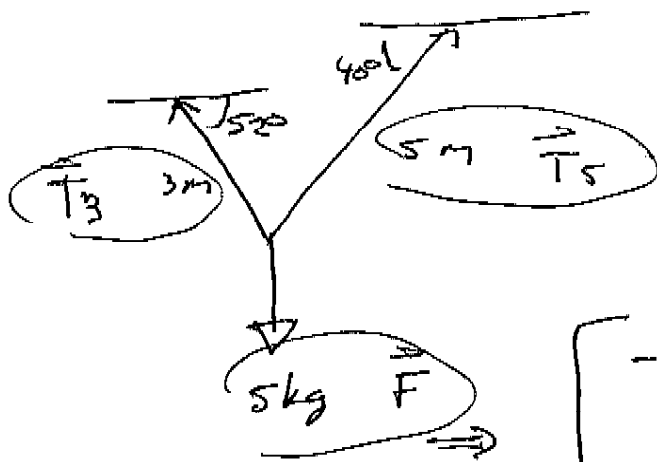


12, 2 # 32



$$\vec{T}_3 = \|\vec{T}_3\| \langle -\cos 52^\circ, \sin 52^\circ \rangle$$

$$\vec{T}_5 = \|\vec{T}_5\| \langle \cos 40^\circ, \sin 40^\circ \rangle$$

$$\vec{F} = \langle 0, 5(-9.8) \rangle$$

$$\begin{bmatrix} -\cos 52^\circ & \cos 40^\circ & \{ & 0 \\ \sin 52^\circ & \sin 40^\circ & \} & 49 \end{bmatrix}$$

RREF on calc.

$$\|\vec{T}_3\| = 37.6 \text{ N} \quad \text{and} \quad \|\vec{T}_5\| = 30.2 \text{ N}$$

$$\vec{T}_3 = \langle -28.1, 29.6 \rangle \quad \text{and} \quad \vec{T}_5 = \langle 23.1, 19.4 \rangle$$

NOTE: "Find the tension," refers to the vector. And, "magnitude of each tension," refers to the 'length' of the vector.

NOTE: The rope lengths were not needed to solve the problem.