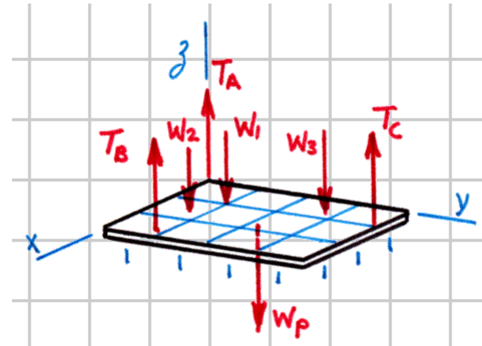
1-82*

$$W_1 = 300(9.81) = 2943 \text{ N}$$

$$W_2 = 100(9.81) = 981 \text{ N}$$

$$W_3 = 200(9.81) = 1962 \text{ N}$$

$$W_P = 500(9.81) = 4905 \text{ N}$$



Draw a free-body diagram of the platform.
The moment equation of equilibrium

$$\Sigma \mathbf{M}_O = \mathbf{0}: \quad (\mathbf{i}+\mathbf{j})\times(-2943\mathbf{k}) + (2\mathbf{i}+\mathbf{j})\times(-981\mathbf{k}) + (3\mathbf{i}+\mathbf{j})\times(T_B\mathbf{k}) + (\mathbf{i}+3\mathbf{j})\times(-1962\mathbf{k}) + (\mathbf{i}+4\mathbf{j})\times(T_C\mathbf{k}) + (1.5\mathbf{i}+2\mathbf{j})\times(-4905\mathbf{k}) = \mathbf{0}$$

has components

$$x: \quad -2943 - 981 + T_B - 5886 + 4T_C - 9810 = 0$$

$$y: \quad 2943 + 1962 - 3T_B + 1962 - T_C + 7357.5 = 0$$

$T_B = 3388.909 \text{ N} \cong 3390 \text{ N}$ .... **Ans.**

$T_C = 4057.773 \text{ N} \cong 4060 \text{ N}$ .... **Ans.**

and the z-component of the force equilibrium equation gives

$$z: \quad T_A + (3388.909) + (4057.773) - (2943) - (981) - (1962) - (4905) = 0$$

$T_A = 3344.318 \text{ N} \cong 3340 \text{ N}$ .... **Ans.**