ASSIGNMENT 1
SEMESTER II, SESSION 2016/2017

COURSE CODE : **SKMM1203**

COURSE NAME : **STATICS   (*STATIK*)**

Name:

Matrix Number:

Q1

The two structural members, one of which is in tension and the other in compression, exert the indicated forces on joint O. Determine the magnitude of the resultant $\mathbf{R}$ of the two forces and the angle θ which $\mathbf{R}$ makes with the positive x-axis.
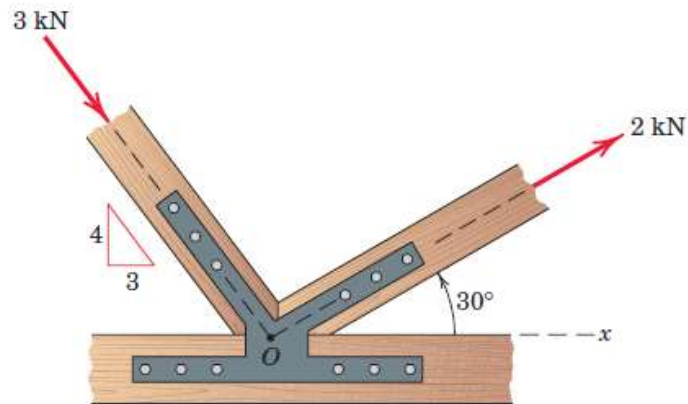

Figure 1

Q2

The t-component of the force $\mathbf{F}$ is known to be 75 N. Determine the n-component and the magnitude of $\mathbf{F}$.

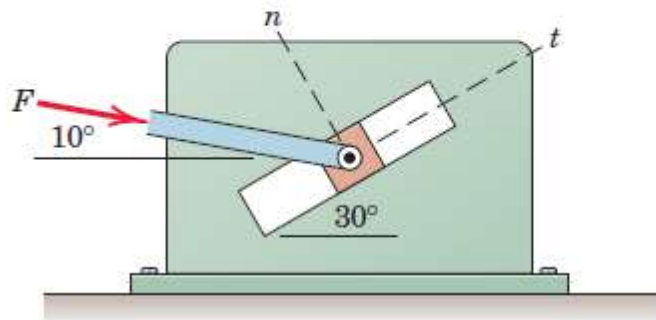**Figure 2**

Q3

The guy cables AB and AC are attached to the top of the transmission tower. The tension in cable AB is 8 kN. Determine the required tension T in cable AC such that the net effect of the two cable tensions is a downward force at point A. Determine the magnitude R of this downward force.
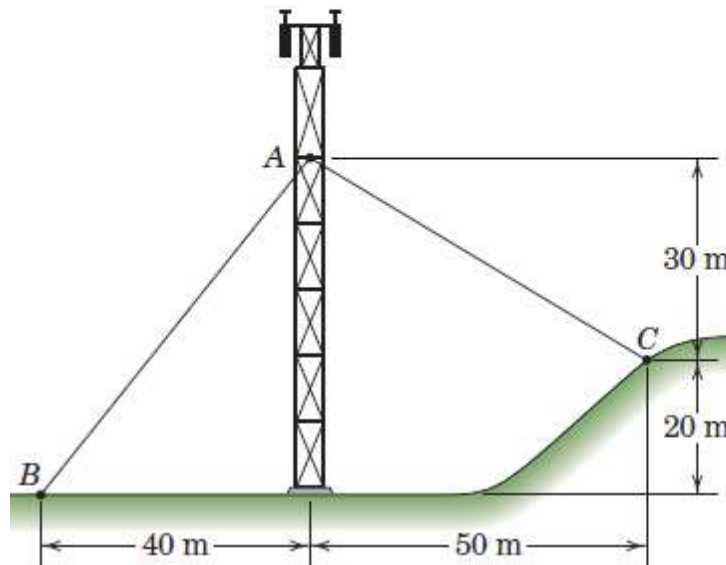

Figure 3

Q4

To satisfy design limitations it is necessary to determine the effect of the 2-kN tension in the cable on the shear, tension, and bending of the fixed I-beam. For this purpose replace this force by its equivalent of two forces at A, F_t parallel and F_n perpendicular to the beam. Determine F_t and F_n.
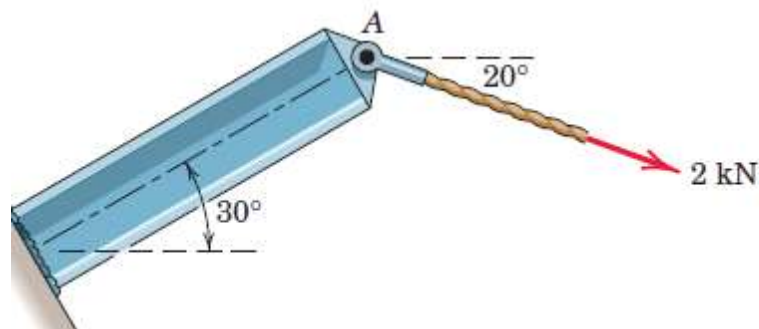

Figure 4