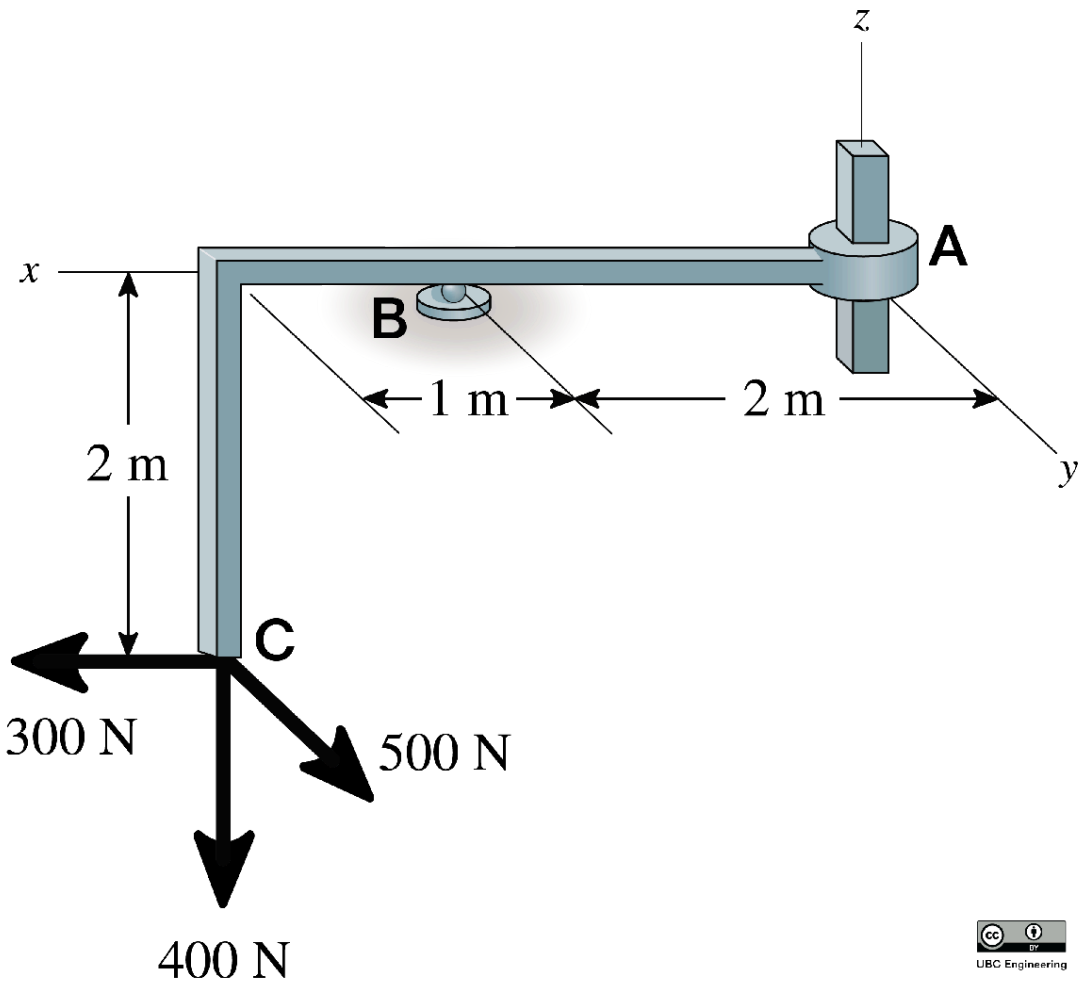

The metal member is held in equilibrium. The member is supported by a square bar fitted through a smooth square hole of the attached collar at point A and by a roller at point B. Determine the components of reactions at supports A and B considering the load that is applied to the member at point C. Ignore the mass of the member. Assume that components are positive if they point along the positive axes.

$\Sigma F_x = 0 \rightarrow A_x + 300\,\text{N} = 0 \rightarrow A_x = -300\,\text{N}$

$\Sigma F_y = 0 \rightarrow A_y + 500\,\text{N} = 0 \rightarrow A_y = -500\,\text{N}$

$\Sigma F_z = 0 \rightarrow N_B - 400\,\text{N} = 0 \rightarrow N_B = 400\,\text{N}$

$\Sigma (M_x)_A = 0 \rightarrow (M_x)_A + (2\,\text{m})(500\,\text{N}) = 0 \rightarrow (M_x)_A = -(2\,\text{m})(500\,\text{N}) = -1000\,\text{N}\cdot\text{m}$

$\Sigma (M_y)_A = 0 \rightarrow (M_y)_A + (3\,\text{m})(400\,\text{N}) - (2\,\text{m})N_B - (2\,\text{m})(300\,\text{N}) = 0 \rightarrow (M_y)_A = 200\,\text{N}\cdot\text{m}$

$\Sigma (M_z)_A = 0 \rightarrow (M_z)_A + (3\,\text{m})(500\,\text{N}) = 0 \rightarrow (M_z)_A = -(3\,\text{m})(500\,\text{N}) = -1500\,\text{N}\cdot\text{m}$