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From a free-body diagram of the pipe the moment equilibrium equation

$$\Sigma \mathbf{M}_{cut} = \mathbf{0}:$$

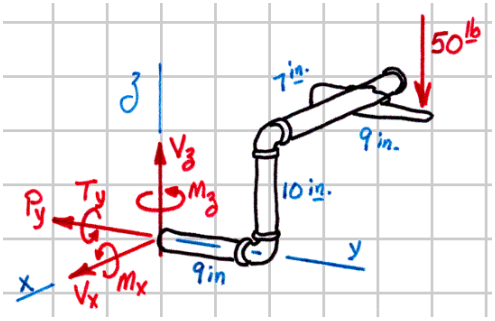
$$\left(M_x\mathbf{i} + T_y\mathbf{j} + M_z\mathbf{k}\right) + \left(-7\mathbf{i} + 18\mathbf{j} + 10\mathbf{k}\right) \times \left(-50\mathbf{k}\right) = \mathbf{0}$$

has *x*-, *y*-, and *z*-components

x: $M_x - 900 = 0$ $\quad M_x = 900 \text{ lb} \cdot \text{in.}$ ..... **Ans.**

y: $T_y - 350 = 0$ $\quad T_y = 350 \text{ lb} \cdot \text{in.}$ ..... **Ans.**

z: $M_z = 0$ $\quad M_z = 0 \text{ lb} \cdot \text{in.}$ ..... **Ans.**



and the force equilibrium equation has components

$\Sigma F_x = 0$: $V_x = 0$ $\quad V_x = 0 \text{ lb}$ ..... **Ans.**

$\Sigma F_y = 0$: $P_y = 0$ $\quad P_y = 0 \text{ lb}$ ..... **Ans.**

$\Sigma F_z = 0$: $V_z - 50 = 0$ $\quad V_z = 50 \text{ lb}$ ..... **Ans.**