Problem 5-12

Determine the magnitude of the resultant force acting at pin $A$ of the handpunch.

Units Used:

Given:

$F := 8\text{lb}$

$a := 1.5\text{ft}$

$b := 0.2\text{ft}$

$c := 2\text{ft}$

Solution:
Problem 5-18

The beam is pin-connected at $A$ and rocker-supported at $B$. Determine the reactions at the pin $A$ and at the roller at $B$.

**Units Used:**

**Given:**

$F := 500\text{N}$

$M := 800\text{N}\cdot\text{m}$

$a := 8\text{m}$

$b := 4\text{m}$

$c := 5\text{m}$

**Solution:**
Problem 5-24

Determine the magnitude of force at the pin $A$ and in the cable $BC$ needed to support the load $W$. Neglect the weight of the boom $AB$.

Units Used:

kip := 1000lb

Given:

$W := 500lb$

$\phi := 22$deg

$\theta := 35$deg

$d := 8$ft

Solution:
Problem 5-28

Determine the tension in the cable and the horizontal and vertical components of reaction of the pin $A$. The pulley at $D$ is frictionless and the cylinder has weight $W$.

Units Used:

Given:

$W := 80\text{lb}$

$a := 5\text{ft}$

$b := 5\text{ft}$

$c := 3\text{ft}$

$d := 2$
Problem 5-35

If the wheelbarrow and its contents have a mass of \( m_w \) and center of mass at \( G \), determine the magnitude of the resultant force which the man must exert on \( each \) of the two handles in order to hold the wheelbarrow in equilibrium.

Units Used:

\[ g := 9.81 \text{ m/s}^2 \]

Given:

\( m_w := 60 \text{kg} \)

\( a := 0.6 \text{m} \)

\( b := 0.5 \text{m} \)

\( c := 0.9 \text{m} \)

\( d := 0.5 \text{m} \)

Solution: