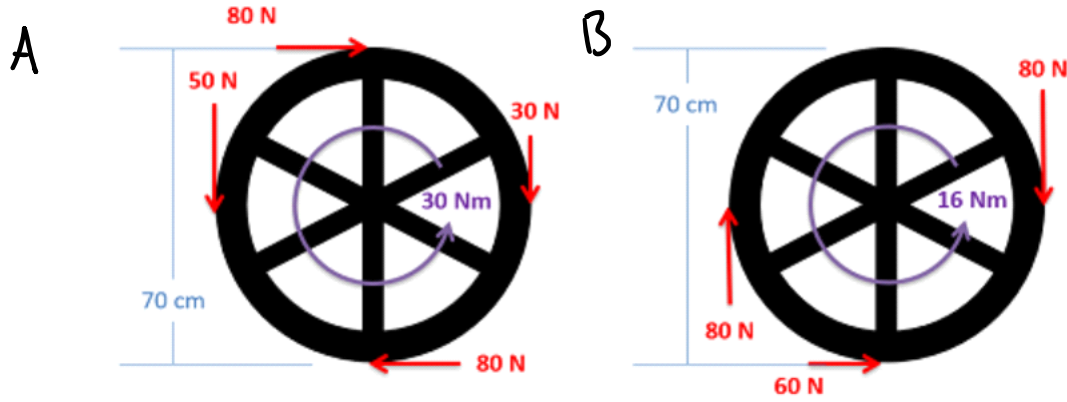


Problem 4

A valve handle as shown below is subjected to two sets of forces and moments. Determine if the two sets of forces and moments are statically equivalent



A

$$\sum F_x = 80 - 80 = \boxed{0}$$

$$\sum F_y = -50 - 30 = \boxed{-80}$$

$$\sum M_o = 30 - (80)(.35) - (30)(.35) - (80)(.35) + (50)(.35)$$

$$\sum M_o = \underline{-19 \text{ Nm}}$$

B

$$\sum F_x = \boxed{60}$$

$$\sum F_y = 80 - 80 = \boxed{0}$$

$$\sum M_o = 16 - (80)(.35) + (60)(.35) - (80)(.35)$$

$$\sum M_o = \underline{-19 \text{ Nm}}$$

The forces are not the same. Therefore the sets of forces and moments are not statically equivalent.