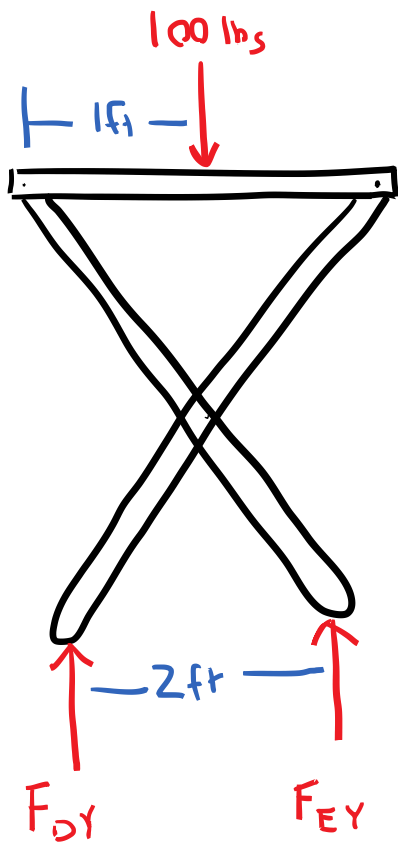
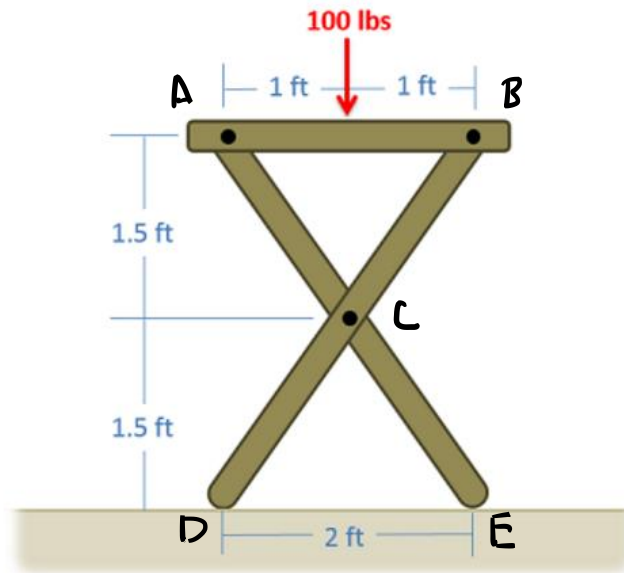


A 100 lb force is exerted on one side of a TV tray as shown below. Assuming no friction forces at the base, determine all forces acting on each of the three parts of the TV tray.



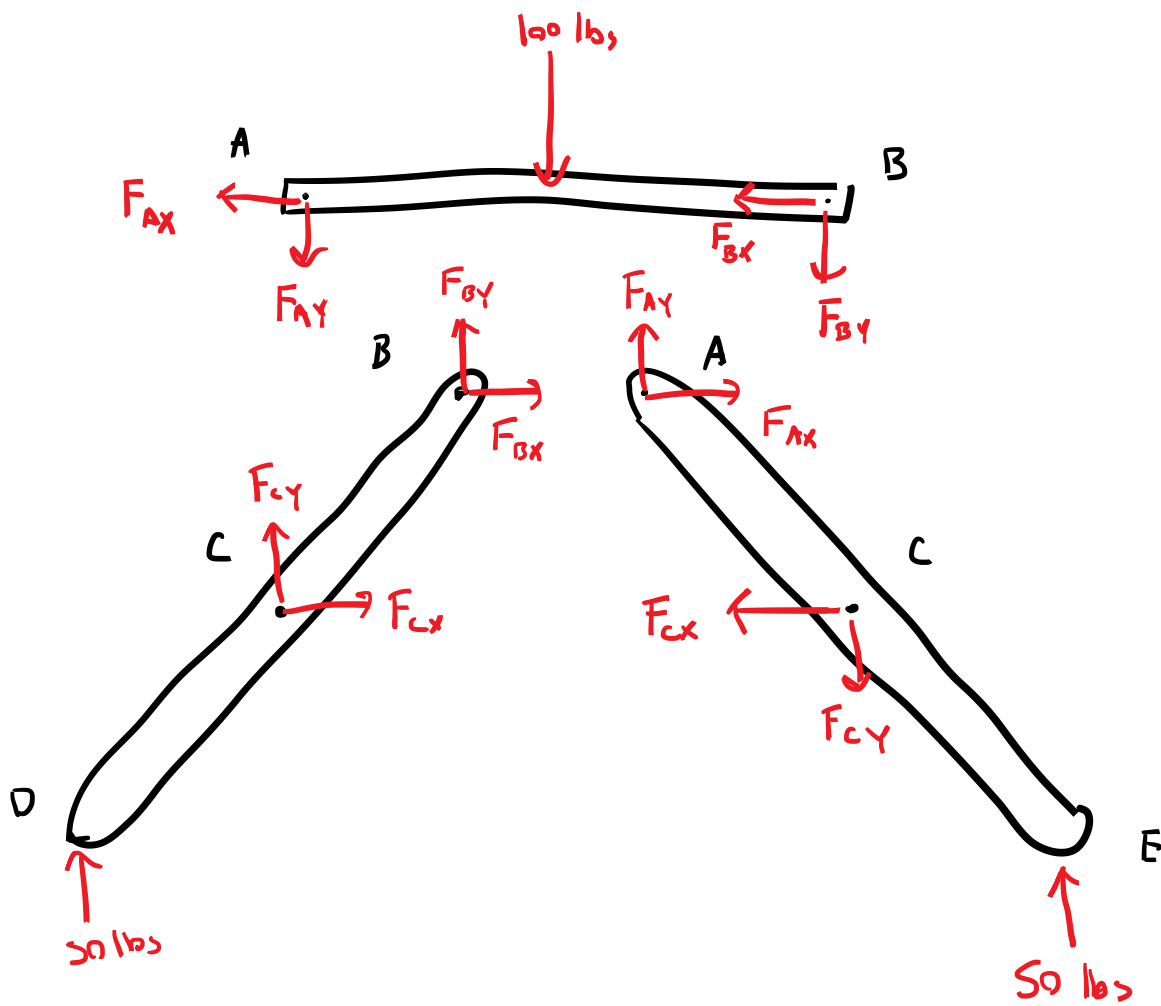
$$\sum F_x = 0$$

$$\sum F_y = F_{DY} + F_{EY} - 100 = 0$$

$$\sum M_D = (F_{EY})(2) - (100)(1) = 0$$

$$F_{EY} = 50 \text{ lbs}$$

$$F_{DY} = 50 \text{ lbs}$$



BCD

$$\sum F_x = F_{cx} + F_{Bx} = 0$$

$$\sum F_y = F_{cy} + F_{By} + 50 = 0$$

$$\sum M_c = -(50)(1) + (F_{By})(1) - (F_{Bx})(1.5) = 0$$

ACE

$$\sum F_x = -F_{cx} + F_{Ax} = 0$$

$$\sum F_y = F_{Ay} - F_{cy} + 50 = 0$$

$$\sum M_c = (50)(1) - (F_{Ay})(1) - (F_{Ax})(1.5) = 0$$

Use equation solver

$$F_{Ax} = 66.67 \text{ lbs} \quad F_{Bx} = -66.67 \text{ lbs} \quad F_{cx} = 66.67 \text{ lbs}$$

$$F_{Ay} = -50 \text{ lbs} \quad F_{By} = -50 \text{ lbs} \quad F_{cy} = 0$$

