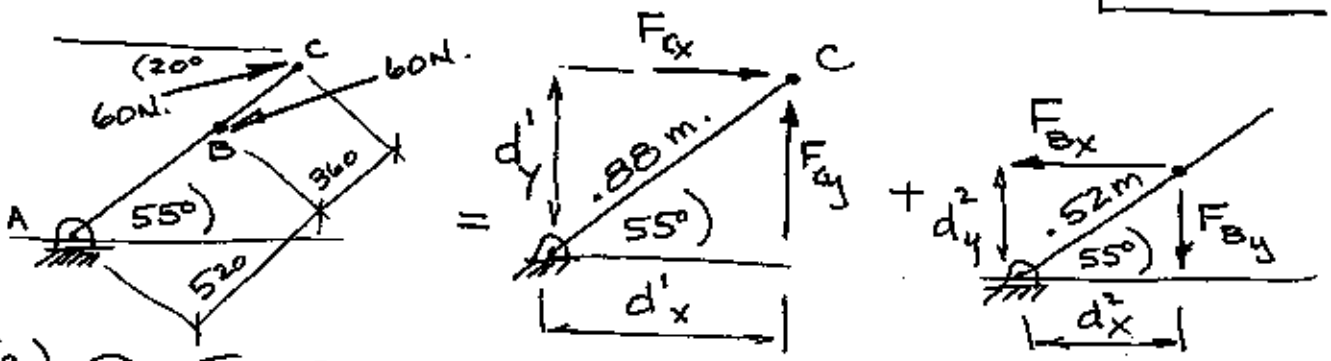
COUPLES

HW. 3.71



(a.) $\circlearrowleft +$

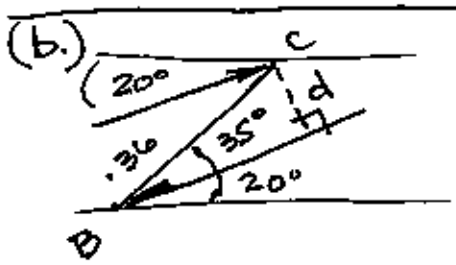
$$\Sigma M_A = \left[F_{Cx}(d_{1y}) + F_{Cy}(d_{1x})\right] + \left[-F_{Bx}(d_{2y}) + F_{By}(d_{2x})\right]$$

$$= (60\cos 20°)(.88\sin 55°) - (60\sin 20°)(.88\cos 55°)$$

$$-(60\cos 20°)(.52\sin 55°) + (60\sin 20°)(.52\cos 55°)$$

$$= 40.64 - 10.36 - 24.02 + 6.12 = 12.38 \text{ N m.} \circlearrowright$$

(b.)

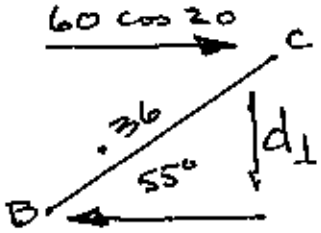


$d = .36\text{ m.}\sin(55° - 20°)$

$= 0.206\text{ m}$

$M = 60\text{N}\,(.206\text{ m}) = 12.389\text{ NM}$ ↻

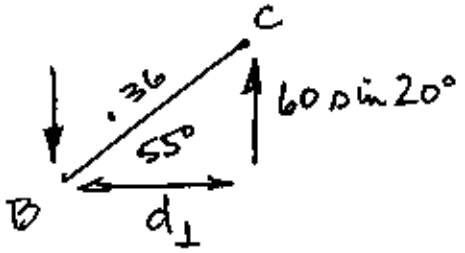
(c.) this is part (a.)



$60\cos 20°\,(.36\sin 55°) = 16.63$ ↻

+

$60\sin 20°\,(.36\cos 55°) = -4.24$ ↺



$= 12.39$ ↻ Nm.