



GIVEN

$$\theta = 23.5^\circ$$

$$X_{AD} = 509 \text{ mm}$$

$$X_{AB} = 566 \text{ mm}$$

$$Y_{AD} = 252.5 \text{ mm}$$

$$R_{By} = 243 \text{ KN}$$

FIND

$F_{DC}$

$$\uparrow \sum M_A: R_{By}(X_{AB}) - F_{DC} \sin(\theta)(X_{AD}) - F_{DC} \cos(\theta)(Y_{AD})$$

$$\Rightarrow F_{DC} = \frac{R_{By}(X_{AB})}{[\sin(\theta)(X_{AD}) + \cos(\theta)(Y_{AD})]}$$

W/ NUMBERS

$$F_{DC} = \frac{(243)(566)}{[\sin(22.4) \cdot 509 + \cos(22.4)(252.5)]}$$

$$F_{DC} = 316.5 \text{ KN}$$

OR IF THERE'S TWO CYLINDERS

$$158.3 \text{ KN}$$