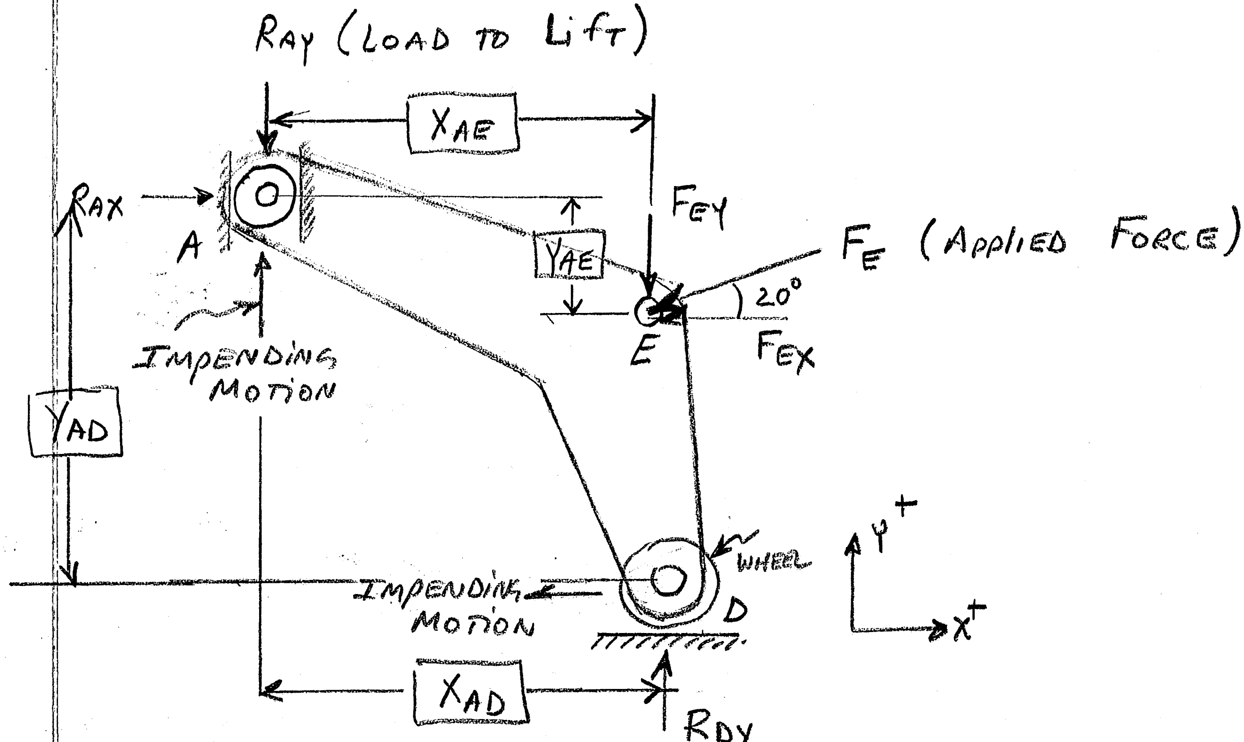

<u>GIVEN</u>: RAY (LOAD), XAE, YAE, XAD, YAD

<u>FIND</u>: FEX, FEY, RDY, RAX

(1) $\overset{+}{\rightarrow} \Sigma F_x$: $R_{AX} - F_{EX} = 0$

(2) $+\uparrow \Sigma F_y$: $-R_{AY} + R_{DY} - F_{EY} = 0$

(3) $\circlearrowleft{+} \Sigma M_A$: $-F_{EY}(X_{AE}) - F_{EX}(Y_{AE}) + R_{DY}(X_{AD}) = 0$

(4) $F_{EY} = F_E \sin(20^\circ)$

(5) $F_{EX} = F_E \cos(20^\circ)$

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MAKING SUBSTITUTIONS & SOLVING.

(3) $$-F_E \sin(20^\circ)(X_{AE}) - F_E \cos(20^\circ)(Y_{AE}) + R_{DY}(X_{AD}) = \phi$$

$$-F_E\left(\sin(20^\circ) X_{AE} + \cos(20^\circ) Y_{AE}\right) + R_{DY}(X_{AD}) = \phi$$

$$R_{DY} = \frac{F_E\left(\sin(20) X_{AE} + \cos(20) Y_{AE}\right)}{X_{AD}}$$

FROM (2) $$-R_{AY} + \left[\frac{F_E\left(\sin(20) X_{AE} + \cos(20) Y_{AE}\right)}{X_{AD}}\right] - F_E \sin 20 = \phi$$

$$-R_{AY} + F_E\left[\frac{\sin(20) X_{AE} + \cos(20) Y_{AE}}{X_{AD}} - \sin(20^\circ)\right] = \phi$$

$$\boxed{F_E = \frac{R_{AY}}{\left[\left[\frac{\sin(20)(X_{AE} + \cos(20) Y_{AE}}{X_{AD}}\right] - \sin 20\right]}}$$

MAKE OTHER SUBSTITUTIONS TO FIND

F_{EX}, F_{EY}, R_{AX} & R_{DY}

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