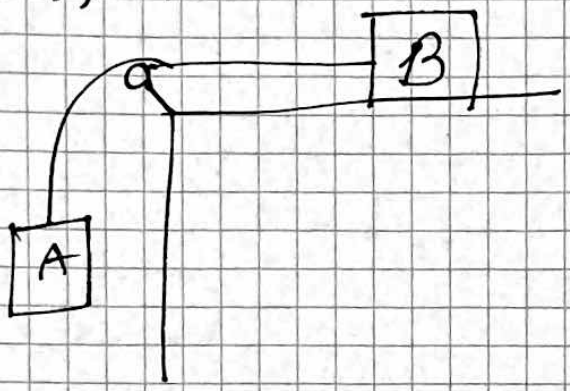
$20 - P - F_A - A_f$

$\uparrow$?

NEW QUESTION
SIMPLER THAN SIP3
P 13-17 IN HIBBELER
PG. 131



WHAT IS a?

$\mu_k =$
mass $= m$

NET FORCE ACTING ON ~~SYSTEM~~ SYSTEM IS

$$(m_A + m_B)\, a = 2ma$$

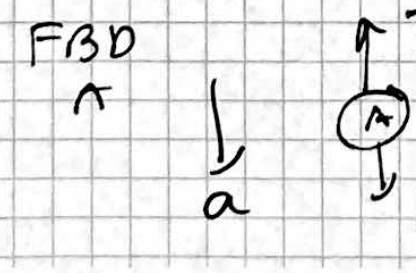
FBD.

NET FORCE IS

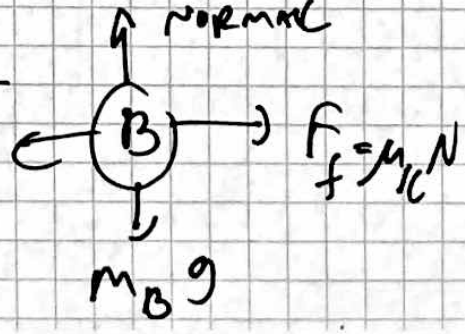
$$m_B g - \mu_k m_a g$$

$$a = \frac{mg - \mu_k mg}{2m} = \frac{1}{2}(g - \mu_k g)$$

FBD



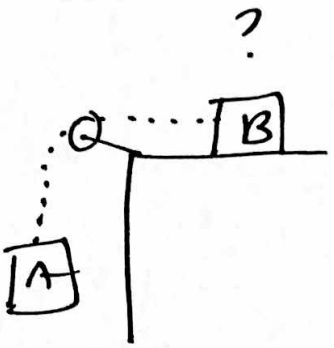
FBD B



MURF GENERAL

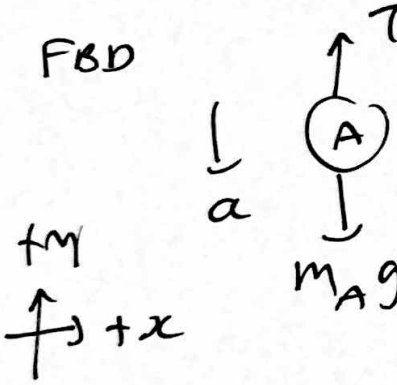
20 - P - FA - AF

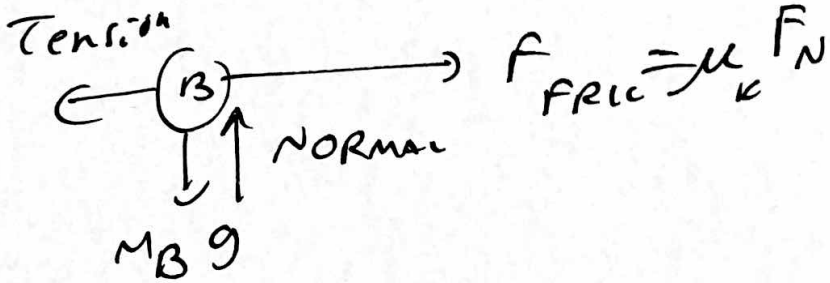
P 13-17
Section 13.4
pg. 131



WHAT IS ACCELERATION "a"?

FBD





$$-m_A a = T - m_A g \quad (1)$$

$$-m_B a = \mu_K m_B g - T \quad (2)$$

SOLVE FOR "a" AND "T"

① ②

SOLVE FOR a

ADD ① + ② ELIMINATE T

$$-m_A a - m_B a = \mu_K m_B g - m_A g$$

$$(m_A + m_B) a = m_A g - \mu_K m_B g$$

$$a = \frac{m_A g - \mu_K m_B g}{m_A + m_B}$$

ELIMINATE a, SOLVE FOR T

$$T = m_A g - m_A a$$

$$T = m_A g - m_A a$$