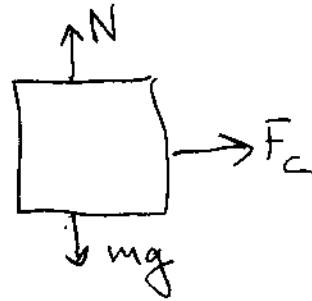
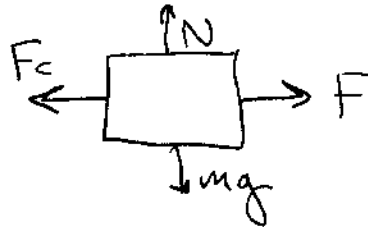


Written HW week 5 solutions:

Free-body diag. for  $M_1$ :



for  $M_2$ :



Know masses have same acceleration (since they are in contact),

so:  $F_c = m_1 a$  (\*)

$$F - F_c = m_2 a$$

Add equations to find  $a$ :

$$F_c + F - F_c = m_1 a + m_2 a$$

$$F = (m_1 + m_2) a$$

$$a = \frac{F}{(m_1 + m_2)}$$

Use equation (\*):

$$F_c = m_1 a = \frac{m_1 F}{(m_1 + m_2)}$$