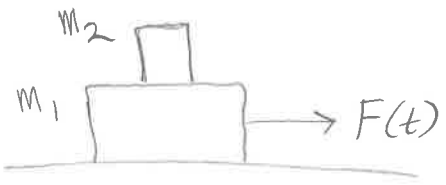
Quiz

Consider two blocks with masses m_1 and m_2, where m_2 lies on top of m_1. There is a coefficient of static friction μ between the two blocks but no friction between m_1 and the ground. If block m_1 is pulled to the right by an increasing force $F(t) = \alpha t$, where $\alpha > 0$, which equation describes the motion of block 1 when block m_2 starts to slide?



(a) $\alpha t + m_1 \mu g = m_1 a$

(b) $\alpha t - m_1 \mu g = m_1 a$

(c) $\alpha t + m_2 \mu g = m_1 a$

(d) $\alpha t - m_2 \mu g = m_1 a$

(e) None of the above

Qu.2

At what time will block m_2 start to slide off of m_1?

(a) $\alpha(m_1+m_2)\mu g$

(b) $\alpha(m_1-m_2)\mu g$

(c) $\frac{1}{\alpha}(m_1+m_2)\mu g$

(d) $\frac{1}{\alpha}(m_1-m_2)\mu g$

(e) None of above