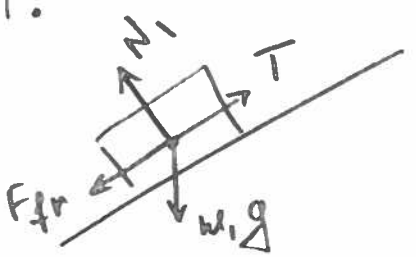
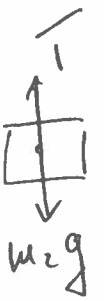
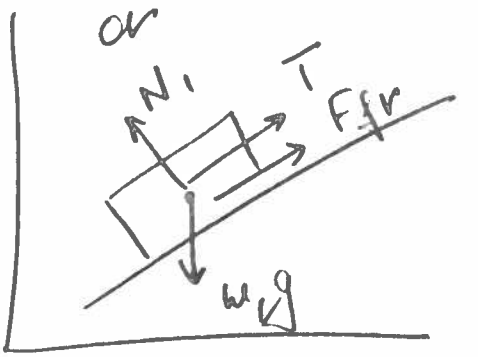
Exam 2 Answers

1.





or



$y \uparrow \quad \nearrow +$ $\vec{F} = (m_2 g - m_1 g \sin\theta)\vec{i} - m_1 g \cos\theta \, \vec{j}$

2. $v_1 = \sqrt{\frac{2\alpha}{Am}}$

3. $mgD\sin\theta - \beta\frac{D^2}{2}\cos\theta - \mu mgD\cos\theta - \mu\beta\frac{D^2}{2}\sin\theta = -\frac{mv_1^2}{2}$

4. $KE_2(x) = \frac{mv_1^2}{2} - \frac{\alpha x^2}{2} - \frac{\beta x^6}{6}$