Answers Exam 2 2018

1) $$K = \frac{3}{7A^3}\left(\frac{3}{2}M v_1^2 + \mu M g A\right)$$

2) $$v_{3x} = \frac{1}{M_3}\left((M_1+M_2+M_3)v_0 - M_1 v_1 \cos\theta_1 - M_2 v_2 \cos\theta_2\right)$$

$$v_{3y} = -\frac{1}{M_3}\left(M_1 v_1 \sin\theta_1 - M_2 v_2 \sin\theta_2\right)$$

$$\vec{v_3} = v_{3x}\,\vec{i} + v_{3y}\,\vec{j}$$

3) $$KE_2 = -\frac{C_1 A^2}{2} + \frac{C_2}{A} + \frac{C_1 x^2}{2} - \frac{C_2}{x}$$

4) $$T = \frac{-\mu g + \sqrt{(\mu g)^2 + \frac{2\beta}{M}\sqrt{\frac{K}{M}}A}}{\beta/M}$$