Classical Mechanics

Answer Sheet – Homework Set 6

Questions beginning with **** do not have answers on this sheet.

$$\left(\frac{3}{2}M+m\right)\ddot{s}+ml\left(\ddot{\theta}\cos\left(\alpha+\theta\right)-\dot{\theta}^2\sin\left(\alpha+\theta\right)\right)-\left(M+m\right)g\sin\alpha=0$$

$$\ddot{z}=\frac{-g}{\left(1+\frac{R^2}{k^2}\right)}$$

$$\ddot{\theta}+\left(\frac{\ddot{s}}{l}\right)\cos\left(\alpha+\theta\right)+\left(\frac{g}{l}\right)\sin\theta=0$$

$$2\ddot{s}+\ddot{l}\cos\alpha-g\sin\alpha=0$$

$$\left(m+M\right)\ddot{l}+m\ddot{s}\cos\alpha=0$$

$$\ddot{x}+\left(\frac{k}{m}\right)x=0$$

$$\ddot{x}=\frac{g}{2}$$

$$\ddot{s}=\left(\frac{5}{7}\right)g\sin\alpha$$

$$\ddot{\theta}+\left(\frac{a}{b}\right)\cos\theta+\left(\frac{g}{b}\right)\sin\theta=0$$

$$\left(m+M\right)\ddot{l}+m\ddot{s}\cos\alpha=0$$

$$\ddot{y}+\left(\frac{k}{m}\right)y=0$$

$$\ddot{s}+\ddot{l}\cos\alpha-g\sin\alpha=0$$

$$\ddot{\theta}+\left(\frac{a+g}{b}\right)\sin\theta=0$$

$$\ddot{\theta}-\left(\frac{a}{b}\right)\omega^2\cos\theta\sin\omega t+\left(\frac{g}{b}\right)\sin\theta=0$$