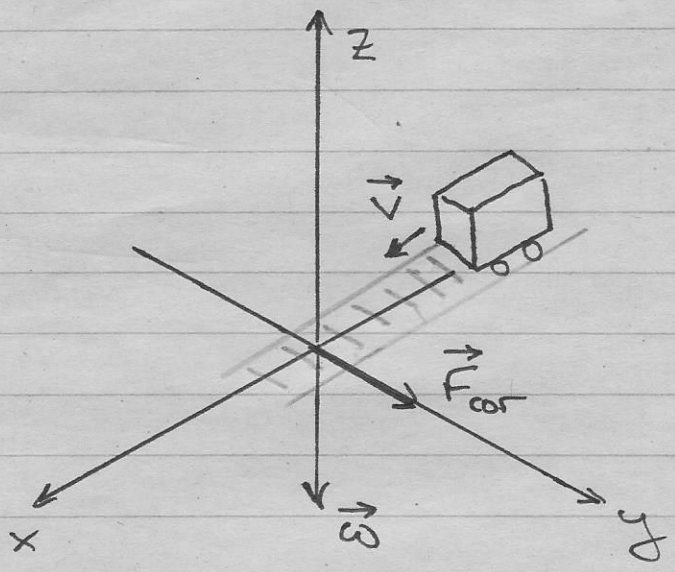
9.25 Train crossing South Pole at 150 m/s.

South Pole at origin:

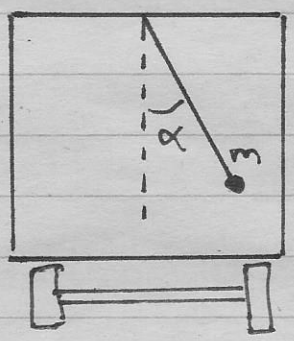


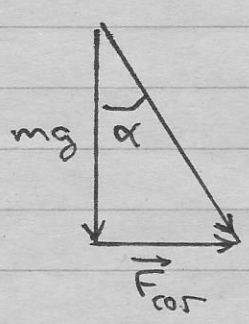
$$\vec{\dot{r}} = v\hat{i} \qquad \vec{\omega} = -\omega\hat{k}$$

$$\rightarrow \vec{F}_{cor} = 2m\vec{\dot{r}} \times \vec{\omega} = 2mv\omega\left(-\hat{i}\times\hat{k}\right) = 2mv\omega\,\hat{j}$$

So $\vec{F}_{cor}$ is toward the train's left.

Inside train: (oncoming)





$$\tan\alpha = \frac{F_{cor}}{mg} = \frac{2mv\omega}{mg} = \frac{2v\omega}{g}$$

$$\rightarrow \alpha = \tan^{-1}\left(\frac{2v\omega}{g}\right) = \tan^{-1}\left(\frac{2(150)\left(\frac{2\pi}{86400}\right)}{9.8}\right) \approx \boxed{0.13^\circ}$$