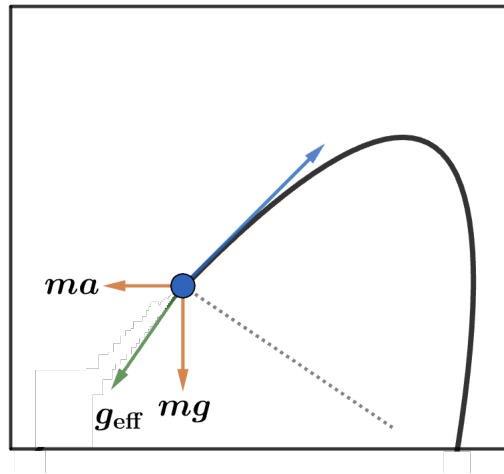


## 2016 F=ma Exam: Problem 5

Kevin S. Huang

In the accelerating frame of the box, we introduce the (fictitious) inertial force  $-m\vec{a}$  on the particle. This has the same form as gravity so combining them results in an effective gravity  $g_{\text{eff}}$  directed in the lower left direction.



The particle now behaves effectively as a projectile with gravity pointing in a new direction. Thus, the path is a rotated parabola so the answer is C.