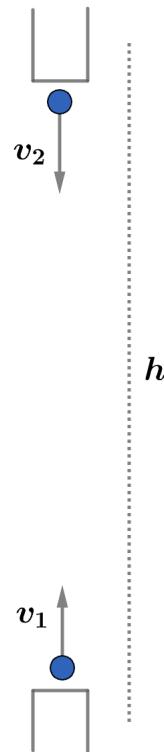


2012 F=ma Exam: Problem 6

Kevin S. Huang



We can go to the free fall frame accelerating downwards at g so that the projectiles become free particles (since we include the fictitious inertial force of magnitude mg pointing upwards which cancels out gravity). Then we have

$$h = (v_1 + v_2)t$$
$$t = \frac{h}{v_1 + v_2} = \frac{200 \text{ m}}{25 \text{ m/s} + 55 \text{ m/s}} = 2.5 \text{ s}$$

so the answer is B.