**Answer on question #69592, Physics / Other**

**Question**   I'm taking a trip aboard the Shanghai Transrapid Train. The train maintains its maximum commercial speed of 430km/h along a straight. I position myself at the centre of my carriage and jump straight up at 2ms-1. How many horizontal meters am I displaced along the aisle before landing?

**Solution**   Let us find time of flight. During this time vertical velocity must change from 2 tp -2 under the action of g. Hence

$$\Delta v = 2 - (-2) = 4 = gt$$

$$t = \frac{\Delta v}{g} = \frac{4}{9.8} \approx 0.41\,s$$

Hence, displacement is

$$s = vt = 430/3.6 \cdot 0.41 \approx 49\,m$$

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