

### **Answer on Question #60256-Physics-Mechanics-Relativity**

A particle of mass  $m$  is projected with velocity  $V$  making an angle of 45 degree with the horizontal. When the particle lands on the level ground the magnitude of the change in its momentum will be?

#### **Solution**

The horizontal component of momentum of projectile doesn't changes. So,

$$\Delta P = \Delta P_{vertical} = [mv \sin(-45) - mv \sin 45] = 2[mv \sin 45] = 2mv \frac{1}{\sqrt{2}} = \sqrt{2}mv.$$

**Answer:**  $\sqrt{2}mv$ .

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