Answer on Question #67806 - Physics | Field Theory

A ball hits a wall horizontally at 6m/s, it rebounds horizontally at 4.4 m/s, the ball is in contact with the wall for 0.04s, what is the acceleration?

Solution

The acceleration of a ball by definition

$$a = \frac{|\Delta \vec{v}|}{\Delta t}.$$

Change of velocity

$$|\Delta \vec{v}| = 6 - (-4.4) = 10.4 \frac{\text{m}}{\text{s}}.$$

Thus

$$a = \frac{10.4}{0.04} = 260 \frac{\text{m}}{\text{s}^2}.$$

Answer: $260 \frac{\text{m}}{\text{s}^2}$.