

Name: Key

Notes - 8.2 Impulse

1. The effect of a force on an object depends on how long it acts, as well as how great the force is. A very large force acting for a short time will have a great effect on the momentum of a tennis ball. A small force could cause the same change in momentum, but it would have to act for a much longer time. Quantitatively, the effect we are talking about is the change in momentum. Δp

2. Write the equation for change in momentum in terms of net force and time.

$$\Delta p = F_{NET} \Delta t$$

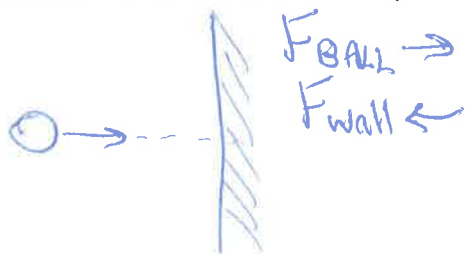
3. $F_{net} \Delta t$ is called impulse.

4. Impulse is the same as the change in momentum.

5. Name a few ways in which an understanding of impulse can save lives:

seat belts, air bags $\Delta t \uparrow$ so $F \downarrow$

6. Two identical billiard balls strike a rigid wall with the same speed, and are reflected without any change of speed. The first ball strikes perpendicular to the wall. The second ball strikes the wall at an angle of 30° from the perpendicular, and bounces off at an angle of 30° from perpendicular to the wall. Determine the direction of the force on the wall due to each ball. Show your work.



7. What does the area under a force-time graph represent?

impulse

