Answer on Question #51051 – Physics – Mechanics, Kinematics, Dynamics

Question: what is the derived unit of momentum?

1. $N \cdot s$
2. $\frac{J}{s}$
3. $\frac{N}{s}$
4. $N \cdot m \cdot s$

Solution: the Newton's second law states

$$\frac{dp}{dt} = F$$

Here p is momentum of a particle and F is force acting on it. Now we can determine the derived unit of momentum:

$$[p] = [F] \cdot [t]$$

$$[F] = N$$

$$[t] = s$$

Therefore,

$$[p] = [F] \cdot [t] = N \cdot s$$

Answer:

1. $N \cdot s$