

**P1.2-2)** What are the simplest units of the following quantities given their equations? The tables shown give the units for each quantity and the relationship between the base units and derived units.

- a)  $T = \frac{1}{2}mv^2$  (Kinetic energy)
- b)  $V = mgh$  (Gravitational potential energy)
- c)  $U = Fd$  (Work)
- d)  $G = mv$  (Linear momentum)
- e)  $I = Ft$  (Linear impulse)
- f)  $H = mvr$  (Angular momentum)

Given:

Quantity	Units
$m$	kg
$t$	s
$h, d, r$	m
$v$	m/s
$g$	m/s <sup>2</sup>
$F$	N

Derived unit	Base units
Force (N)	N = kg·m/s <sup>2</sup>
Energy (J)	J = N·m = kg·m <sup>2</sup> /s <sup>2</sup>

Find:

Solution:

a)  $T = \frac{1}{2}mv^2 =$

b)  $V = mgh =$

c)  $U = Fd =$

d)  $G = mv =$

e)  $I = Ft =$

f)  $H = mvr =$