Ex 36

$M = \frac{MV}{V}$ quantità di moto / velocità

① $\frac{1,7}{30} = 0,06\ kg$

$\frac{1}{2} M v^2$ = energia cinetica

$\frac{1}{2} M v^2 = \frac{1}{2}(0,06\ kg)\left(30 \frac{M}{sec}\right)^2 = 27\ kg \cdot \frac{M^2}{sec^2}$

② $M = 40\ kg$

$MV = 400\ kg \cdot M/sec$

$v = ?$ $\rightarrow \frac{MV}{M} = \frac{400\ kg \cdot M/sec}{40\ kg} = 10 \frac{M}{sec}$

$\frac{1}{2} M v^2 = ?$

$\frac{1}{2}(40\ kg)\left(10 \frac{M}{sec}\right)^2 = 2000\ kg \cdot \frac{M^2}{sec^2}$

③ $M = 580\ kg$

$v = 20\ M/sec$

$MV = ?$ $\rightarrow 580\ kg \cdot 20\ M/sec = 11600\ kg \cdot \frac{M}{sec}$

$\frac{1}{2} M v^2 = \frac{1}{2}(580\ kg)\left(20\ M/sec\right)^2 = 116000\ kg \cdot \frac{M^2}{sec^2}$

④ $MV = 0,00002\ kg \cdot \frac{M}{sec}$

$en.\ cin = 0,000004\ kg \cdot \frac{M^2}{sec^2}$

$M = ?$

$V = ?$

$$V = \frac{\frac{1}{2} MV^2}{M} = \frac{1}{2} V$$

$$\frac{1}{2} V = \frac{\frac{1}{2} MV^2 = (0,000004\ kg \cdot \frac{M^2}{sec^2})}{0,00002\ kg \cdot \frac{M}{sec}} = 0,2\ \frac{M}{sec}$$

$$V = 0,2 \cdot 2 = 0,4\ \frac{M}{sec}$$

$$M = \frac{MV}{V} = \frac{0,00002\ kg \cdot M/sec}{0,4\ M/sec} = 0,00005\ kg$$

⑤ $M = 75\ kg$

$MV = 1200\ kg \cdot M/sec$

$V = ?$

$\frac{1}{2} M V^2 = ?$

$$V = \frac{MV}{M} = \frac{1200\ kg \cdot M/sec}{75\ kg} = 16\ M/sec$$

$$\frac{1}{2} M V^2 = \frac{1}{2}(75\ kg)(16\ M/sec)^2 = 9600\ kg \cdot \frac{M^2}{sec^2}$$

⑥ $M = 1\ kg$

$V = 80\ KM/h \rightarrow M/sec = ?$

$80\ KM/h$

$$80\ KM = \frac{80000\ M}{1\ h} = \frac{80000\ M}{3600\ sec} =$$

$$V = 22,22\ \frac{M}{sec}$$

$$MV = 1\ kg\left(22,22 \frac{M}{sec}\right) = 22,22\ kg \cdot \frac{M}{sec}$$

$\frac{1}{2} M V^2 =$