$$W_{net} = \Delta K$$

$$K = \frac{1}{2} m v^2$$

$$W_{net} = \vec{F}_{net} \cdot \vec{d} = m\vec{a} \cdot \vec{d}$$

$$P_{av} = \frac{W}{\Delta t}$$

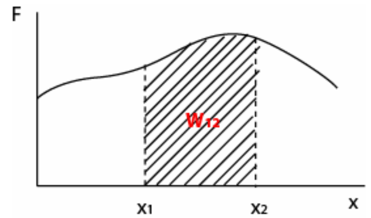
$$P = \frac{dW}{dt} = \vec{F} \cdot \vec{v}$$

$$W = \vec{F} \cdot \vec{d} \quad (\text{for constant F})$$

$$= Fd \cos\phi = F_{\|} d$$

In general:

$$W = \int \vec{F} \cdot d\vec{s} = \int F_x \cdot dx + \int F_y \cdot dy + \int F_z \cdot dz$$



Particular Results:

$$W_g = F_g . d = mg\ d \cos\phi$$

$$W_s = -\frac{1}{2} k \left(x_f^2 - x_i^2\right)$$

where k is the spring constant from Hooke's Law:

$$F = -k\ x$$

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