

Do Now 10-30

What is the work done on a satellite by the gravitational force? No

What does the work kinetic energy theorem say about the satellite's speed?

$$W = 0$$

$$W = \Delta KE = 0 \quad \text{No}$$

$$\text{Power} = \frac{\text{work}}{\text{time}} \quad P = \frac{W}{t}$$

measured in Watts (W)

$$\text{Work} = \text{Force} \cdot \text{Distance}$$

$$W = Fd \cos \theta$$

θ is angle between Force & distance

$\rightarrow F$ $\cos 0 = 1$
 $\rightarrow d$
Positive work

$F \leftarrow$ $\cos 180 = -1$
 $\rightarrow d$
Negative work

$\downarrow F$ $\rightarrow d$ $\cos 90 = 0$
No work

$W = \Delta KE$
Work = change in kinetic energy

$$P = \frac{W}{t} = \frac{F \cdot d}{t} \quad \frac{d}{t} = v$$

Power = Force x velocity
($P = F \times v$)

Objectives

Learn & apply the work energy theorem.
Learn & apply the equation for power.

Agenda

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