**Work-Energy Theorem Notes**

[**https://www.brightstorm.com/science/physics/energy-and-momentum/work-energy-theorem/**](https://www.brightstorm.com/science/physics/energy-and-momentum/work-energy-theorem/)

Definition:

Work-Energy Theorem- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Looking at the formulas:

Looking at the units:

Practice problems:

1. What is the net work required to accelerate a 3kg object from 2 m/s to 4 m/s?

Formula:

Plug in numbers:

Answer:

2. What is the net work required to accelerate a 10 kg object from 8m/s to 14 m/s?

Formula:

Plug in numbers:

Answer:

3. What is the force required to move a 12kg object from 4m/s to 6m/s a distance of 2 meters?

Formula:

Plug in numbers:

Answer:

4. A 1500 kg car accelerates from rest to a velocity of 25m/s over a distance of 45 meters.

a. What is the change in kinetic energy?

b. What is the work done on the car?

c. What is the net force applied to the car?