

Physics 112

Wednesday, December 6/17

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Blocked Off -> Wednesday Lunch and After School

1. Review for SA - U3 S1
2. SA - U3 S1 -> Fill in the Blanks and 4 Problems
-> Date: Thursday, Dec. 7/17
3. Concept Sheet:
U3 - S2: Types of Energy and Work-Energy Theorems

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4. Kinetic Energy
 5. Work-Kinetic Energy Theorem
 6. Worksheet - Textbook - C6 PP #19-21
Textbook - C6 PP #22-25
 7. Gravitational Potential Energy
 8. Reference/Zero Lines
 9. Work-Gravitational Potential Energy
 10. Worksheet - Textbook - C6 PP #27 and 29
- Textbook - C6 PP #30 and 33

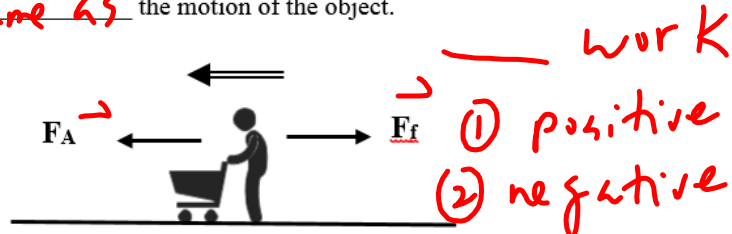
Physics 112

Review -> SA: U3 S1 - Work, No Work and Types of Work

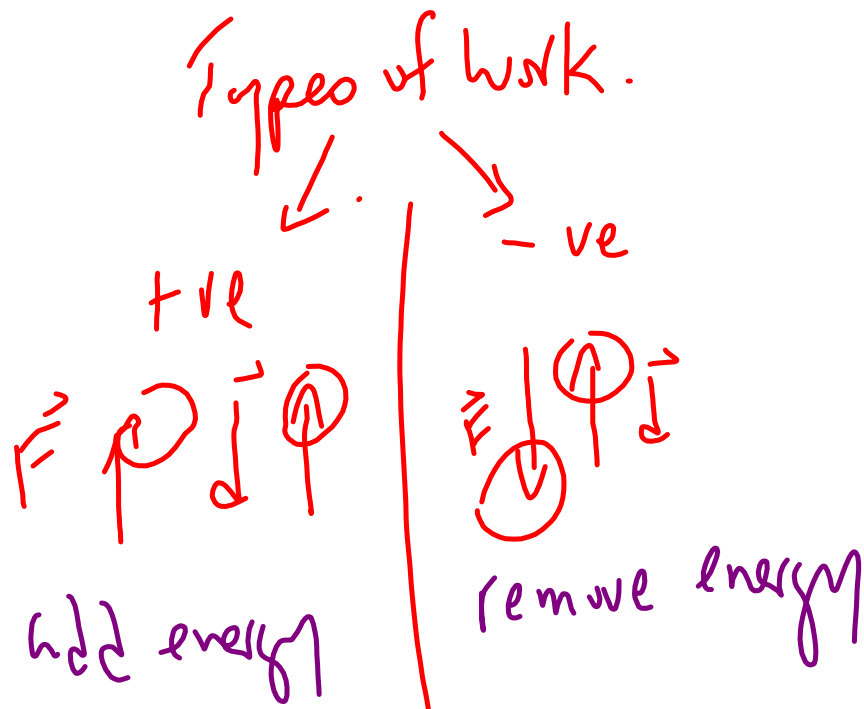
Part 1 - Fill in the Blanks

Complete each statement with a word(s) or symbol(s) to make the statement true. Watch your spelling!

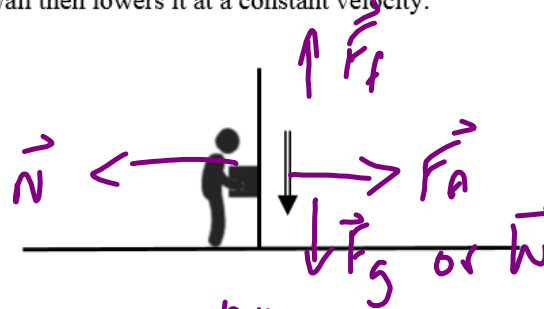
1. Work is always done by a(n) individual force. single
2. Work is a(n) scalar quantity. * scalar/vector
3. The man does positive work on the cart as he walks down the corridor because his force has a direction that is the same as the motion of the object.



4. Work is a measure of energy transfer. (3) no
5. Negative work done on an object removes energy from the object. (4) does/does not



6. A man holds a box against a wall then lowers it at a constant velocity.

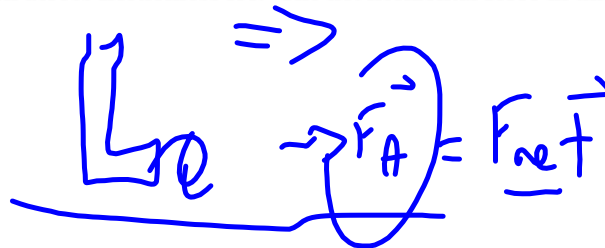


- a) The normal force does no work on the box.
- b) The force of friction does negative work on the box.
- c) The weight of the box does positive work on the box.

7. A joule, J, expressed as a combination of base units is $\frac{kg m^2}{s^2}$.

8. Displacement is a vector quantity.

9. A hockey stick pushes a puck across frictionless ice. The net horizontal force in this case does work.



F_{net} is a single force so it does do work in this case.

$$= \frac{kg m^2}{s^2}$$

1. Tommy does 0.18 J of work on a 7.3 g pencil while pushing it with a force of 3.3 N. How far, in cm, did the pencil move?

$$W = 0.18 \text{ J}$$

$$m = 7.3 \text{ g} \times$$

$$F = 3.3 \text{ N}$$

$$d = ?$$

$$W = Fd$$

$$d = \frac{W}{F}$$

$$d = \frac{0.18 \text{ J}}{3.3 \text{ N}}$$

$$d = 0.055 \text{ m} \Rightarrow 5.5 \text{ cm}$$

WS.

2. A physics student does 0.0473 J of work on a cart to push it 0.058 m along on air track (no friction). If the cart had a mass of 1.8 kg, what was the magnitude of the acceleration of the cart?

$$W = 0.0473 \text{ J}$$

$$d = 0.058 \text{ m}$$

$$m = 1.8 \text{ kg}$$

$$a = ?$$

$$\vec{F}_A = \vec{F}_{\text{net}}$$

$$W = Fd$$

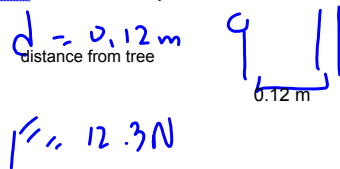
$$W = mad$$

$$a = \frac{W}{md}$$

$$a = 0.45 \text{ m/s}^2$$

WS.

3. A man standing 0.12 m from the trunk of a redwood tree pushes on the trunk with a force of 12.3 N. How much work is done on the tree by the man?



$$W = Fd$$

$$W = 12.3(0)$$

$$W = 0 \text{ J.}$$

tree doesn't move

4. a) A crane does $1.35 \times 10^4 \text{ J}$ work to lift a beam 2.98 m. What was the mass of the beam?
b) What type of work was done by the force of gravity on the beam as it was lifted? Explain.

a) $W = 1.35 \times 10^4 \text{ J.}$
 $d = 2.98 \text{ m}$
 $m = ?$
const. vel.

$$W = Fd$$

$$W = mgd$$

$$W = m$$

$$gd$$

$$m = 462 \text{ kg.}$$

WS.

b) The force of gravity does negative work. The directions of F_g and d are opposite.

Physics 122

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Blocked Off -> Wednesday Lunch and After School

1. SA - U2: S3&4 (SHM and Projectiles)
2. Coulomb's Law - To Be Continued

Science 10

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1. Optional Assignment - Graphing Characters (max 2 -20 pts each)
2. Retry - SA - Physics #1
3. [Worksheet - Finding Slope from a Graph - HW](#)
4. Roller Coasters