



COLEGIO NACIONES UNIDAS I.E.D.

Aprobado según Resoluciones 10-085 DE MARZO 20 DE 2009

FORMACIÓN INTEGRAL DE LÍDERES EMPRENDEDORES COMPETENTES, CON PRINCIPIOS DEMOCRÁTICOS, TECNOLÓGICOS,
CULTURALES Y DEPORTIVOS

"EDUCACIÓN, CIENCIA, CULTURA Y DEPORTE PARA TRASCENDER"



EIGHTH GRADE

SKILLS WORKSHOP

INSTRUCTIONS

"Copy and solve the workshop in the notebook"

Date delivery: July 15th

Read carefully and select the correct answer:

1. In physics, we say that one or more forces perform mechanical work when they overcome the resistance of another agent and make it move from one point to another.
 - a. Work
 - b. Mechanical Work
 - c. Physical Work
 - d. Dynamic Work
2. If the force is in the direction of the movement
 - a. $\theta = 0^\circ$
 - b. $\theta = 90^\circ$
 - c. $\theta = 180^\circ$
 - d. $\theta = 270^\circ$
3. If the force is perpendicular to the movement.
 - a. $\theta = 270^\circ$
 - b. $\theta = 180^\circ$
 - c. $\theta = 90^\circ$
 - d. $\theta = 270^\circ$
4. If the force is in the opposite direction to the movement.
 - a. $\theta = 0^\circ$
 - b. $\theta = 90^\circ$
 - c. $\theta = 180^\circ$
 - d. $\theta = 270^\circ$
5. If $W = (F\cos\theta)d$
 - a. Mechanical Work
 - b. Mechanical Work of a Force
 - c. Mechanical Work of a Constant force
 - d. Work
6. The unit of work in the International System S.I. is
 - a. Erg
 - b. Dyne
 - c. Poundal
 - d. Joule



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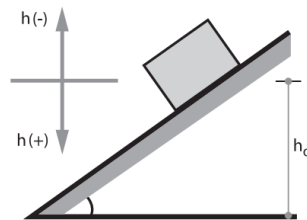
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7. Convert 10 Joules to ergs ($1 \text{ Joule} = 10^7 \text{ ergs}$)
 - a. 100,000,000 ergs
 - b. 10,000,000 ergs
 - c. 1,000,000 ergs
 - d. 100,000 ergs
8. Convert 64.4 poundal-feet to lb-feet ($1 \text{ lb-foot} = 32.2 \text{ Poundal-feet}$)
 - a. 1 lb-foot
 - b. 2 lb-feet
 - c. 3 lb-feet
 - d. 4 lb-feet
9. The potential energy of a body does not depend on:
 - a. The height at which it is located.
 - b. Gravity.
 - c. Its weight.
 - d. Its velocity.
 - e. Its mass
10. A body slides down a smooth inclined plane, starting from a height h_0 with respect to the floor. Which of the following graphs qualitatively represents the work "W" done by the body's weight as a function of the height h ? [$0 < h < h_0$]





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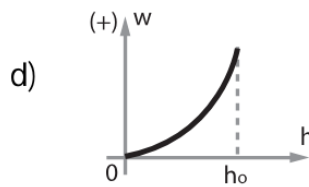
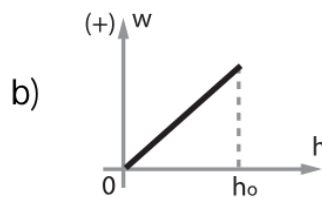
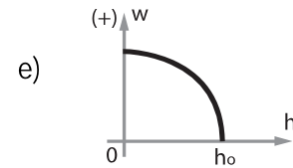
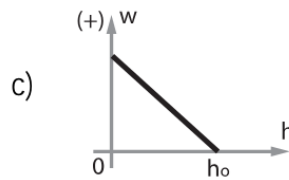
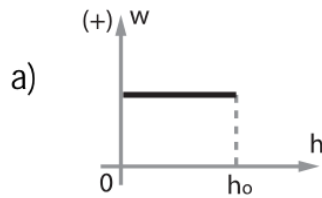
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SKILLS WORKSHOP



11. Consider the following propositions.

Identify the incorrect one:

- The energy of the Universe is constant.
- The total work is equal to the change in mechanical energy.
- Kinetic energy depends on the Velocity of the mobile.
- Potential energy is equal to the kinetic energy achieved.
- If we gain energy, it is because we Have done mechanical work.

12. Identify the true proposition.

- The total energy of an isolated system remains constant.
- Energy has the same unit as work.
- Mechanical energy cannot be transformed into another type of energy. TEST

- Only I
- Only II
- Only III
- I and II
- I, II, and III

13. The work done by a moving mass is called energy.....

- Potential
- Wind
- Kinetic



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- d. Gravitational
 - e. Thermal
14. If the net work on a body is negative, then:
- a. Its velocity decreases.
 - b. The body moves deceleratingly.
 - c. Only the force of friction acts on the body.
 - d. The body moves in a circular path.
 - e. The body's velocity is constant.
15. Indicate true (T) or false (F) in the following propositions:
- I.- The work of the normal force (N) is zero.
 - II.- Work is a vector quantity.
 - III.- The work done by the weight (P) of a body is always zero.
- a. FTF
 - b. TFF
 - c. FTF
 - d. TFT
 - e. TTT
16. The kinetic energy of a body depends on:
- a. The height at which it is located.
 - b. Gravity
 - c. Its weight
 - d. Its velocity
 - e. All of the above.
17. Indicate true (T) or false (F):
- () Kinetic energy is constant for a U.C.M.
 - () Gravitational potential energy expresses the measure of the interaction of two bodies.
- a. TT
 - b. TF
 - c. FT
 - d. FF
 - e. N.A.
18. Which motor is more efficient, the one



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that loses one-fifth of the useful power
or the one that gives as useful four-fifths
of the absorbed power?

- a. The first one.
- b. The second one.
- c. Both have equal power.
- d. Data is missing.
- e. N.A