

## Chapter Test A

### Work and Simple Machines

#### Multiple Choice

**Directions:** On the line before each question, write the letter of the correct answer.

- \_\_\_\_\_ 1. How is the energy of an object affected after work is done on it?  
**A.** Energy is increased.  
**B.** Energy is decreased.  
**C.** Energy remains the same.
- \_\_\_\_\_ 2. Which machine works by changing the direction of a force?  
**A.** a rake  
**B.** a pulley  
**C.** a screwdriver
- \_\_\_\_\_ 3. Which statement describes the relationship between input work and output work using a machine?  
**A.** Input work is always equal to output work.  
**B.** Input work is always less than output work.  
**C.** Input work is always greater than output work.

#### Matching

**Directions:** On the line before each definition, write the letter of the term that matches it correctly. Each term is used only once.

##### Matching Set 1

- |   |                                |
|---|--------------------------------|
| _____ 4. the ratio of the output force exerted to the input force applied                                       | <b>A.</b> power                |
| _____ 5. the transfer of energy to an object by a force that makes an object move in the direction of the force | <b>B.</b> efficiency           |
| _____ 6. the ratio of the output work to the input work   | <b>C.</b> work                 |
| _____ 7. the rate at which work is done   | <b>D.</b> mechanical advantage |

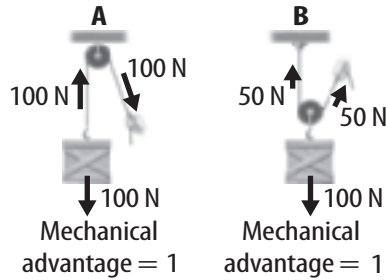
##### Matching Set 2

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|--|--------------------------|
| _____ 8. a simple machine made of a grooved wheel with a rope or cable wrapped around it | <b>E.</b> inclined plane |
| _____ 9. a sloped surface that moves   | <b>F.</b> screw          |
| _____ 10. an inclined plane wrapped around a cylinder                                    | <b>G.</b> wedge          |
| _____ 11. a flat, sloped surface   | <b>H.</b> pulley         |

## Chapter Test A continued

### Interpreting Diagrams

**Directions:** Use the diagrams to respond to each statement.



**12. Identify** the simple machines shown in each diagram.

**13. Identify** which factors are changed by the simple machine in diagram A by checking one box in each row below.

	Changes	Does Not Change
<b>Direction of Force</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Amount of Force</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Distance Force Is Exerted</b>	<input type="checkbox"/>	<input type="checkbox"/>

**14. Identify** which factors are changed by the simple machine in diagram B by checking one box in each row below.

	Changes	Does Not Change
<b>Direction of Force</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Amount of Force</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Distance Force Is Exerted</b>	<input type="checkbox"/>	<input type="checkbox"/>

**Chapter Test A continued**

**Short Answer**

**Directions:** Respond to each statement on the lines provided.

**15. Explain** how power and work are related.

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**16. Define** *mechanical advantage* in terms of input force and output force.

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**17. Explain** how friction affects the work done by machines.

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**Concept Application**

**Directions:** Respond to each statement on the lines provided. Use complete sentences.

**18.** A carpenter uses a crowbar to pry a nailed board from a deck. **Explain** how the crowbar increases the amount of input force to allow the carpenter to do this.

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**19. Describe** a situation in which work done to an object changes the energy of the object.

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**20. Define** *compound machine* and give an example.

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## Chapter Test B

### Work and Simple Machines

#### Matching

**Directions:** On the line before each definition, write the letter of the term that matches it correctly. Not all terms are used.

- |          |  |                                |
|----------|--|--------------------------------|
| _____ 1. | a simple machine made up of a grooved wheel with a rope or cable wrapped around it.                    | <b>A.</b> power                |
| _____ 2. | the transfer of energy to an object by a force that makes an object move in the direction of the force | <b>B.</b> wedge                |
| _____ 3. | a sloped surface that moves  | <b>C.</b> work                 |
| _____ 4. | the rate at which work is done   | <b>D.</b> mechanical advantage |
| _____ 5. | the ratio of the output force exerted to the input force applied                                       | <b>E.</b> efficiency           |
| _____ 6. | the ratio of the output work to the input work   | <b>F.</b> screw                |
| _____ 7. | an inclined plane wrapped around a cylinder  | <b>G.</b> wheel and axle       |
| _____ 8. | a flat, sloped surface   | <b>H.</b> pulley               |
|          |  | <b>I.</b> inclined plane       |

#### Multiple Choice

**Directions:** On the line before each question or statement, write the letter of the correct answer.

- \_\_\_\_\_ 9. Which distance do you measure to determine how much work was done on an object that has been moved?
- vertical distance
  - horizontal distance
  - all distance against gravity
  - distance in the direction of motion
- \_\_\_\_\_ 10. A rake makes doing work easier by changing the
- size of the force.
  - distance a force acts.
  - direction of the force.
  - amount of work required.
- \_\_\_\_\_ 11. Which factor always causes the output work of a machine to be less than the input work?
- gravity
  - fatigue
  - friction
  - distance