



**Work and Machines** ▪ *Chapter Test*

- \_\_\_\_\_ 9. Compound machines are
- a. machines that use gears.
  - b. machines used to make mixtures.
  - c. combinations of simple machines.
  - d. machines that use wheels.
- \_\_\_\_\_ 10. When you bend your arm at the elbow, the fulcrum is at your
- a. wrist.
  - b. elbow.
  - c. fingertips.
  - d. biceps.

**Completion**

*Fill in the line to complete each statement.*

11. In order to do work on an object, the object must \_\_\_\_\_ as a result of your force.
12. A machine's \_\_\_\_\_ is the number of times a force exerted on a machine is multiplied by the machine.
13. In a screwdriver, the handle is the wheel and the shaft is the \_\_\_\_\_.
14. Muscles are attached to bones by \_\_\_\_\_.
15. The more efficient a machine is, the closer the actual mechanical advantage is to the \_\_\_\_\_.

**True or False**

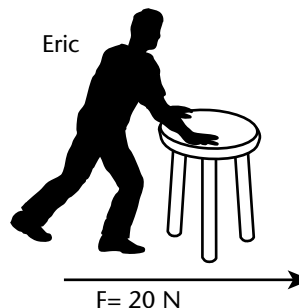
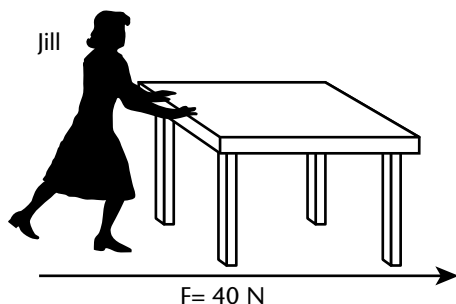
*If the statement is true, write true. If it is false, change the underlined word or words to make the statement true.*

- \_\_\_\_\_ 16. A machine decreases the amount of work you do.
- \_\_\_\_\_ 17. An inclined plane wrapped around a central cylinder is a lever.
- \_\_\_\_\_ 18. A rope wrapped around a grooved wheel is a pulley.
- \_\_\_\_\_ 19. A single fixed pulley, such as a flagpole, changes the amount of the input force.
- \_\_\_\_\_ 20. When you bite into a sandwich, your front teeth act as wedges.

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**Using Science Skills: Interpreting Diagrams**

Use the diagram below to answer Questions 21 and 22.



**21. Interpreting Diagrams** Jill is pushing on a table. Eric is pushing on a smaller stool. Each person moves their object 3 m. How can you determine whether Eric and Jill are performing work?

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**22. Problem Solving** How much work does Eric perform? How much work does Jill perform? Who performs more work?

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**Essay**

Write an answer for each of the following questions in the space provided. If you need more space, use a separate sheet of paper.

**23.** Describe an instance where you would exert force on an object, but not do any work on it. Describe an instance where you would exert force on an object and also do work on it.

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**24.** List the six types of simple machines and give an example of how you would use each one in your daily life.

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**25.** Describe the three ways that a machine makes work easier and give an example of a machine that would help in each way.

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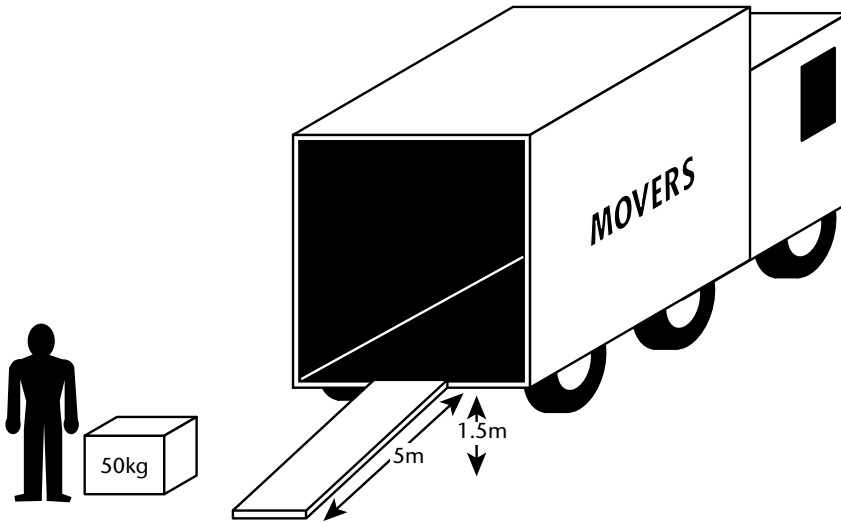


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**Using Science Skills: Interpreting Diagrams**

Use the diagram below to answer the following questions.



26. **Interpreting Diagrams** The mover must move this crate into the truck. Explain why the work will be easier if the mover uses the ramp.

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27. **Problem Solving** How do you calculate the ideal mechanical advantage of the ramp? What is the ideal mechanical advantage of the mover's ramp?

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**Essay**

Write an answer for each of the following questions.

28. Why would you use a machine if it does not decrease the amount of work you do?

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29. A machine has a mechanical advantage of 1. What does that tell you about the input and output forces? Give an example of a machine with a mechanical advantage of 1.

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30. What effect does friction have on a machine's efficiency? How could you use what you know about friction to make a machine more efficient?

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