

Name: \_\_\_\_\_ Block: \_\_\_\_\_

## Work

1. Find the work done against gravity by a weightlifter lifting a 30. kg barbell 1.5 m upwards at a constant speed.

441 N·m
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2. A 3000. kg car is moving across level ground at  $5.0 \frac{\text{m}}{\text{s}}$  when it begins an acceleration that ends with the car moving at  $15 \frac{\text{m}}{\text{s}}$ . Is work done in this situation? How do you know?

3. An Alaskan huskie pulls a sled using a 500. N force across a 10. m wide street. The force of friction on the 90. kg sled is 200. N. How much work is done by the huskie? How much work is done by friction? How much by gravity?

dog: 5 000 N·m
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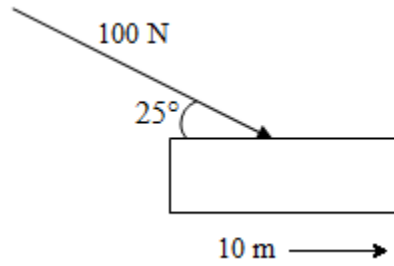
friction: zero
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gravity: zero
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4. A 60. kg man climbs a 3.0 m tall flight of stairs. What work was done by the man against the force of gravity?

1 764 N·m
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5. Find the work done when a 100. N force at an angle of  $25^\circ$  pushes a car 10. m to the right, as shown in the diagram below.



$$906.3 \text{ N}\cdot\text{m}$$