1. A 25 N force pushes a block across a surface for 6 m . How much work is done by the applied force?
2. If, in the previous question, there is a $15 \mathbf{N}$ kinetic frictional force opposing the motion, how much work is done by the force of friction? Does friction do positive work or negative work on the block? Draw a free-body diagram to support your answer.
3. A forklift applies a force of $2,000 \mathrm{~N}$ to raise a box 3 m . How much work is done by the forklift in raising the box?

## Work each of the following problems. SHOW ALL WORK.

4. If the box weighs $\mathbf{1 , 5 0 0} \mathbf{N}$, how much work does the force of gravity do on the box? Is the work positive or negative? Draw a free-body diagram to support your answer.
5. Using the information from the previous two questions, what is the total, or net, work done to the box?
6. A 50 N block is raised 2 m . If the net work done on the block is 50 J , what is the applied force on the block?

## Work each of the following problems. SHOW ALL WORK.

7. A 25 N block is lowered 1.2 m by a 20 N force.
a. Draw a free-body diagram of the forces acting on the block.
b. How much work does the force of gravity do on the box? Is this work positive or negative?
c. How much work does the applied force do on the box? Is this work positive or negative?
8. Does it require more work to raise a 15 kg block by $\mathbf{4} \mathbf{m}$ or to raise a $\mathbf{2 0} \mathbf{~ k g}$ block by $\mathbf{2 ~ m}$, if both are moving at a constant velocity? Draw a free-body diagram to help solve the problem.
