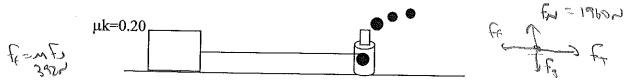
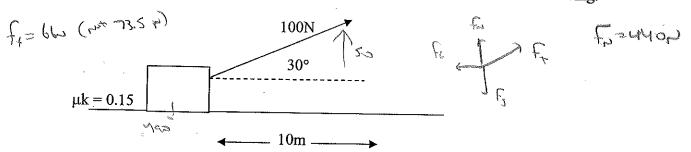


Work (By a constant force)

- 1. On his way to college, Russell drags his suitcase 15 meters from the door of his house to the car at a constant speed while applying a horizontal force of 95 N.
 - a. How much work does Russell do to pull the suitcase to the car? 1425
 - b. If the sidewalk were icy, and Russell still pulled the suitcase at a constant velocity, would he have to do more work or less work to move the suitcase, Why?
- 2. A 200 kg box is pulled at a constant speed by the little engine in the picture below. The box moves a distance of 2.5 meters across the horizontal surface.



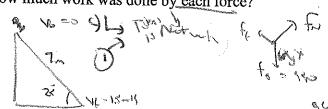
- a. Draw a free body diagram on the box.
- b. How much work is done by the pulling force? Stori
- c. What type of motion would occur if the engine pulled with a force of 500N? Quantitatively solve for a value that represents that motion.
- d. How much work is done on the box by the force of earth. Show your work and explain your answer.
- e. How far could the box be pulled (at a constant velocity) if 8000 J of work was done by the pulling force?
- 3. A man pulls a 50 kg box with a force of 100 N as shown below. The box is moving.



- a. Draw a free body diagram of the box.
- b. Determine the component of the applied force that acts in the direction of the motion.
- c. What work is done by the pulling force to move the block 10m? (10) (10) (10) (10)
- d. Is the box moving at a constant speed? Explain your answer.
- e. How much work is done by frictional force? (66) (13) costs = -(65)

A 100 kg man, starting from rest, slides down a 7 meter long incline which makes a 25° angle with the horizontal. The man reaches the ground at a speed of 1.5 m/s.

a. What was the frictional force? 3%.b. How much work was done by each force?



9601-57 - fo = (100)(-16)

(16) Good un

Mass & NEW

(15)= 2(0)(7)

(1.75 = 14a

ME = (318) (7) ME = (318) (7)