

SECTION

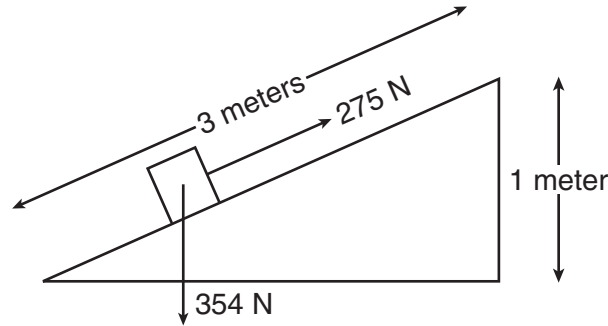
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Enrichment

Calculating Work

Directions: Solve the following problems.

1. A box weighing 354 N is pushed up an inclined plane that is 3 m long. A force of 275 N is required, including friction.



- a. What is the work done to slide the box?

- b. How much work is done if the box is lifted 1 m instead?

- c. Which method of lifting the box requires more work?

- d. Which method of lifting the box would be easier?

2. How much power is generated if a person applies 200 N of force to move a bicycle 10 m in 5 s?

3. A 700-watt gasoline engine and a 300-watt electric motor both do 3 J of work. Which machine can do the work faster? Explain your answer.

4. In the English system, the unit of power is the horsepower. It is based on the amount of work the average horse can do. (1 horsepower = 746 watts).
- a. If a car engine is rated at 125 horsepower, how many watts of power does it produce?

- b. If a lawnmower engine is rated at 4 horsepower, how many watts of power is that?
