

Work 1

Solve the following problems.

1. (Serway, p 162 #1) A tugboat pulls a ship with a constant net horizontal force of 5.00×10^3 N and causes the ship to move through the harbor. How much work is done on the ship if it moves a distance of 3.00 km?

2. (Serway, p 162 #2) A weight lifter lifts a set of weights a vertical distance of 2.00m. If a constant net force of 350 N is exerted on the weights, what is the net work done on the weights?

3. (Serway, p 162 #3) A shopper in a supermarket pushes a cart with a force of 35N directed at an angle of 25° downward from the horizontal. Find the work done by the shopper on the cart as the shopper moves along a 50.0 m length of aisle?

4. (Serway, p 162 #4) If 2.0 J of work is done to raise a 180g apple at a constant rate, how far is the apple lifted?

5. A person pushes a box with a force of 300N. If the force is exerted downward at some angle, what must the angle be if the displacement is 15m and the work done is 3200J.

