

Work Practice Problems

1. A teacher pushed a 10-kg desk across a floor for a distance of 5 meters. She exerted a horizontal force of 20 N. How much work was done?
2. A weight-lifter lifts a 150-kg barbell above his head from the floor to a height of 2 m. He holds the barbell for 5 seconds. How much work does he do during that 5-second interval?
3. If 4000 joules are used to raise a 30-N mass, how high was the mass raised?

Efficiency Practice Problems

1. How efficient is a machine that requires 150 Joules to operate and does 135 Joules of work?
2. If a woman operating a machine moves a lever 0.2 m with a force of 120 N and the machine, as a result, propels a box forward 1.5 m with a force of 5.5 N, how efficient is the machine?
3. The input to a machine is 275 Joules. The output force is 45 Newtons over 5 meters. What is the efficiency rating of the machine?