

Problem Solving Problems

1. The table below shows the values of a force function $f(x)$, where x is measured in meters and $f(x)$ is measured in Newtons. Use the Midpoint rule to estimate the work done by the force in moving an object from $x = 4$ to $x = 20$?

x	4	6	8	10	12	14	16	18	20
$f(x)$	5	5.8	7	8.8	9.6	8.2	6.7	5.2	4.1

2. A uniform cable hanging over the edge of a tall building is 40 ft long and weighs 60 lbs. How much work is required to pull 10 ft of the cable to the top?

3. A cable that weighs 2 lb/ft is used to lift 800 lbs of coal up a mine shaft 500 ft deep. Find the work done.

4. A chain lying on the ground is 10 m long and its mass is 80 kg. How much work is required to raise one end of the chain to a height of 6 m?