Chapter 6 Problem 15 [†]

Given
$\Delta x = 75\ cm = 0.75\ m$
$W = 140\ MJ = 1.40 \times 10^8\ J$

Solution
Find the average force as the meteorite hits the ground.

From the definition of work.

$$W = F\Delta x$$

Solving for the average force gives

$$F = \frac{W}{\Delta x} = \frac{1.40 \times 10^8\ J}{0.75\ m} = 1.87 \times 10^8\ N$$

$$F = 187\ MN$$

[†]Problem from Essential University Physics, Wolfson