



Work

Section 8.5

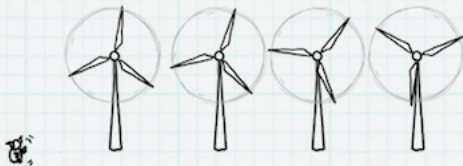
June 4, 2015



Yoda

How much Force power can Yoda output?

—Ryan Finnie





Work=Force*Distance



Formula

$$W = F * D$$

Units	Force	Distance	Work
International(SI)	newton(nt)	meter(m)	joule(j)
British	pound(lb)	foot(ft)	foot-pound(ft-lb)

Examples

- Find the work required to lift 80 lbs a distance of 6ft.
- Find the work required to move book with a force of 8 nt 3m.



An important Fact



Ex:0

Find the work done on a 20 kg suitcase when it is raised 30 centimeters.

Hint: There are two steps you need to do before you can solve.



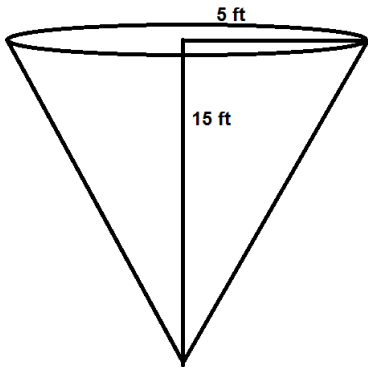
Example 1



Filling a conical tank

A conical tank contains 10ft of water. Find the work required to pump the water to the top of the tank.

NOTE: Water has density of 63.4 lbs/ft^3





Example 2



Weighted Pulley

A 10 lb weight is hanging at the end of a 20 ft rope that weighs 4 oz./ft. The other end of the rope is attached to a pulley. How much work is required to wind the rope up the pulley?

