

## **Physics 11 - Work, Power, Energy Worksheet**

1. Calculate the work done by a 47 N force pushing a pencil 0.26 m.
2. Calculate the work done by a 47 N force pushing a 0.025 kg pencil 0.25 m against a force of 23 N.
3. Calculate the work done by a 2.4 N force pushing a 400 g sandwich across a table 0.75 m wide.
4. How far can a mother push a 20.0 kg baby carriage, using a force of 62 N, if she can only do 2920 J of work?
5. How much work is it to lift a 20 kg sack of potatoes vertically 6.5 m?
6. If a small motor does 520 J of work to move a toy car 260 m, what force does it exert?
7. A girl pushes her little brother on his sled with a force of 300 N for 750 m. How much work is this if the force of friction acting on the sled is (a) 200 N, (b) 300 N?
8. A 75.0 kg man pushes on a 500,000 t wall for 250 s but it does not move. How much work does he do on the wall?
9. A boy on a bicycle drags a wagon full of newspapers at 0.80 m/s for 30 min using a force of 40 N. How much work has the boy done?
10. What is the gravitational potential energy of a 61.2 kg person standing on the roof of a 10-storey building relative to (a) the tenth floor, (b) the sixth floor, (c) the first floor. (Each storey is 2.50 m high.)
11. A 10 000 kg airplane lands, descending a vertical distance of 10 km while travelling 100 km measured along the ground. What is the plane's loss of potential energy?