

How Powerful Are You?

Name _____ Period _____ Date _____

1) Multiply pounds by 0.45 to convert to kilograms.

How much do you weigh? _____ Pounds $\times \left(\frac{0.45 \text{ Kg}}{\text{pound}} \right) =$ _____ Kg.

2) What is the distance in meters between the first and second floor?

Distance between floors = _____ Meters

Work to climb stairs = mass x gravity x distance

Show your work: (gravity = 9.8 m/s^2)

Work done = _____ Joules

3) Time to climb the stairs = _____ Seconds

$$\text{Power} = \frac{\text{work}}{\text{time}}$$

$$\text{Power} = \frac{mgd}{t}$$

Show your work:

Power = _____ Watts

4) How many 60-Watt light bulbs could **YOU** light if you ran on a giant hamster wheel?

5) Something fun:

$$\text{Horsepower} = \text{Watts} / 746$$

What is your horsepower? Show your work!