

Your weight in pounds _____

Your weight in newtons _____

Height of stairs _____

Calculate the work done to lift you from the ground to the height of the stairs.

Calculate the power, in watts, delivered by your body to get you to the top of the stairs.

Convert your power in watts to the unit of horsepower. (1hp = 746 W)

1) Explain why you are doing work by climbing up the stairs. (Use the conditions)

2) If two people, both of the same mass, were to race up a hill, who would do more **work** to get to the height: the person who came in first or the person who came in last? Explain.

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3) Calculate the work a weightlifter needs to do on a 100 kg dumbbell to lift it a distance of 2 m.

4) How much work does he do on the dumbbell if he holds it above his head?

5) If it took the weightlifter 1.5 seconds to lift the dumbbell, what would be the power rating of the weightlifter?

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