Power Practice Name:_____

Reflection and Self-Assessment

Part 1: Circle the statement that best describes how you completed the practice:

- I answered all questions without using the online solutions. I checked my answers against the key at the back of the practice and was able to determine my mistakes and correct them without referring to the online solutions.

- I answered most questions correctly without using the online solutions. I used the online solutions to help me with some questions and was able, with help from the online solutions, to understand every question and answer them correctly.

- I used the online solutions to help me with most of the questions. I was able, with help from the online solutions, to understand each question and answer them correctly.

- Even using the online solutions, I was not able to fully understand the solution to some problems. The questions I had trouble with were:

  _____

- I did not attempt all the questions on the practice.

Part 2: Circle the statement that best describes your confidence in answering questions of this type in the future.

- I am confident I can answer nearly any question of this type correctly without using notes or other assistance.

- I am confident I can answer **MOST** questions of this type correctly without using notes or other assistance.

- I am **NOT** confident I can answer most questions of this type correctly without using notes or other assistance.

Part 3: Circle the statement below that best describes the total amount of time you spent actively working on this practice:

Less than an hour	Between one and two hours	Between two and three hours	Between three and four hours	More than four hours

Power Practice Name:_____

1. What is the power of a motor that does 65 000 J of work in 120 seconds?

2. How long does it take 2.5 kW (kilowatt) electric motor to do 75 000 J of work?

3. How much work can a 520 W electric mixer do in 2.5 **minutes**?

Power Practice Name:_____

4. What velocity can a 12.0 W motor lift a 4.0 kg object at?

5. If a 100.0 W light bulb is left on for 1.0 **hours**, how much energy is consumed?

6. A kilowatt hour is a measure of energy. Determine how many joules a kilowatt hour is.

Power Practice Name:_____

7. A force of 5.0 N moves a 6.0 kg object along a floor at a constant speed of 2.5 m/s for 22 seconds. What power is being used?

8. What power in needed to heat 1.0 litres of water from 22°C to 98°C in 3.5 seconds? The specific heat capacity of water is $4200\frac{J}{kg\,°C}$.

9. 350mL of 22°C water (with mass 0.35 kg) is placed on a 1200 W heating plate. How hot will the water be after one **minute**?

Power Practice Name:_____

10. A car's engine accelerates a 1200 kg car from rest to 100.0 **km/hr** in 5.0 seconds. What is the power output of the engine during this time? (answer in both watts and horsepower)

11. A 72 kg person runs up a staircase 3.0 m high in 3.5 seconds. What is her power in hp?

12. An elevator is powered by a 10.0 hp motor. What is the maximum mass it can raise at a constant speed through a vertical distance of 40.0 m in 18 seconds?

13. A machine pulls a 450 kg block along a surface with $\mu = 0.24$ at 5.3 m/s. What power is the machine outputting?

14. A 56 kg block is pushed up a 26° frictionless incline at a constant velocity using 450 watts of power. How fast is the block moving up the ramp?

15. A 2.3 kg model car is accelerated by a 6.4 watt engine for 12.0 seconds from rest. Then it coasts over a surface with $\mu = 0.44$. How far will the car travel before it stops?

Power Practice Name:_____

Power Practice Name:_____

Answer Key				
1) 540 watts	2) 3.0×10^1 sec	3) 78 000 J or 7.8×10^4 J	4) 0.31 m/s	5)360 000J or 3.6×10^5 J
6)3.6×10^6 J	7) 13 W	8)91 000 W OR 91 kW	9)71°C	10)93 000 W, 120 horse power
11) 0.81 horsepower	12)340 kg	13) 5600 W or 5.6 kW	14) 1.9 m/s	15) 7.7 m