Physics 11 Unit 3 Energy Year end Review sheet

Name: _____

> Total cost = # of kilowatt hours x cost per kilowatt hour

1. How much power does it take to lift a 57 kg box up 1.4 m in 1.5 seconds.

2. How much useful power does a 1200 W motor produce if it is 60% efficient?

3. What is the KE of a 1150 kg car travelling at 25 m/s?

- 4. How much energy in Joules does a 100 W bulb use in 3 hours?
- 5. How many kilowatts is 2000 W?

6. How many kilowatts is 60 W?

7. How many kilowatt hours of energy does a 60 W light bulb use in 8 hours?

8. If you use your 1600 W toaster 30 mins a day, how many kilowatt hours of energy does it use in a month? If you pay 7 cents for a kilowatt hour of energy, how much does it cost to run your toaster?

9. How much does it cost to leave the front porch light on each night for a month. Assume a four 13 watt bulbs, 8 hours a night, 30 days, and 7 cents per kilowatt hour.

10. A 1500 kg car starts rolling (from rest) down a 16 m high hill. Assuming no energy is lost on the way down, how fast is the car going at the bottom?

11. A 2800 kg car travelling at 120 km/hr approaches a hill and rolls to the top. During the journey to the top, 900,000 J of energy are converted to heat. How far up the hill does the car roll?

12. How much energy is needed to raise the temp of a 56.8 Kg of water by 15 C