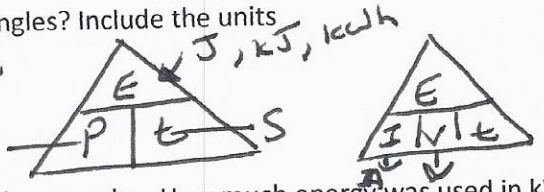
Energy Questions Worksheet

1. What are the 2 energy formulas, triangles? Include the units

$E = Pt$ $E = IVt$



2. You used a 750 W hairdryer for 20 minutes a day. How much energy was used in kWh?

$E = Pt$ $750 \times 20 \times 60 \div 3600000 =$ 0.25 kWh

3. An oven is used for 50 minutes per day for 60 straight days. Its voltage is 100 V and its intensity is 4.5 A. How much energy was used in J for the 60 days?

$E = IVt$ $4.5 \times 100 \times 50 \times 60 \times 60 =$ 81 000 000 J

4. How much power was used if a TV was on for 3 hours and needed 600 000 J of energy?

$P = \frac{E}{t}$ $\frac{600000}{3 \times 3600} =$ 55.6 W

5. A kettle is used for 15 minutes a day and used 700 000 J of energy. How much power was used?

$P = \frac{E}{t}$ $\frac{700000}{15 \times 60} =$ 777.8 W

6. A computer is on for 3 hours a day. It has a voltage of 350 V and an intensity of 12 A. How much energy is used in kJ?

$E = IVt$ $12 \times 350 \times 3 \times 3600 \div 1000 =$ 45 360 kJ

7. A stereo is on for 20 minutes a day and has a power of 200 W. How much energy is used in kWh?

$E = Pt$ $200 \times 20 \times 60 \div 3600000 =$ 0.07 kWh

8. A humidifier is used for 1 000 minutes a day for 30 days. Its voltage is 100 V and its intensity is 3 A. What is the energy used in kWh for the 30 days?

$E = IVt$ $100 \times 3 \times 1000 \times 60 \times 30 \div 3600000 =$ 150 kWh

9. How much time elapsed in hours if a TV used 500 000 J of energy and needs 200 W of power?

$t = \frac{E}{P}$ $\frac{500000}{200} = \frac{2500}{3600} =$ 0.69 hrs

10. A toaster takes 45 seconds to toast a piece of bread. If it uses 200 W of power how much energy will be used up in J?

$E = Pt$ $200 \times 45 =$ 9000 J

11. A computer uses 7000 W of power and is used for 115 minutes a day. How much energy is used for one day in J?

$E = Pt$ $7000 \times 115 \times 60 =$ 48 300 000 J

12. You recharge your cell phone for 4 hours a night, 3 days a week. It uses 200 V and 3 A to recharge. How much energy was used in kWh for the week?

$E = IVt$ $3 \times 200 \times 4 \times 3600 \times 3 \div 3600000 =$ 7.2 kwh

13. Your dustbuster uses 180 000 J of energy and 300 W of power. How many minutes did you use your dustbuster for?

$t = \frac{E}{P}$ $\frac{180\,000}{300} = \frac{600}{60} =$ 10 min

14. A radio is on for 1 hour and has 500 W of power. How much energy was used in kJ?

$E = Pt$ $500 \times 1 \times 3600 \div 1000 =$ 1800 kJ

15. A blow-dryer is used for 15 minutes a day. It uses 190 V and 3 A. How much energy is used in J?

$E = IVt$ $3 \times 190 \times 15 \times 60 =$ 513 000 J

16. If a computer used 850 000 J of energy and 90 W of power. How long did you use the computer for?

$t = \frac{E}{P}$ $\frac{850\,000}{90} =$ 9444.4 s

17. A DVD player consumes 86 400 J of energy when used for 2 hours. The appliance is plugged into a 120 V electrical outlet. How much current does the DVD player draw?

A) 0.003 A (B) 0.1 A C) 6.0 A D) 360 A

$I = E/Vt$ $\frac{86400}{120 \times 2 \times 3600} =$ 0.1 A

18. Which appliance produced more energy

a- A blow-dryer used for 20 minutes and having 300 W of power

(b-) A TV used for 2 hours and having 100 W of power

c- A microwave used for 90 seconds and needing 220 V and 1.5 A

a

$300 \times 20 \times 60$

360 000 J

b

$100 \times 20 \times 3600$

7200 000 J

c

$1.5 \times 220 \times 90$

29 700 J