

Energy Efficiency questions

Energy efficiency can be calculated using this equation:

$$\% \text{ energy efficiency} = (\text{useful energy output} \div \text{total energy input}) \times 100$$

Note: when you see brackets in a maths equation, that means you should work that bit out before anything else!

Also note: The unit for energy is the Joule, with the symbol J for short. There is no unit for energy efficiency.

Use the equation above to calculate the energy efficiency of the following systems, A – F. The first one has been done for you as an example.

A) The useful energy output is 252 Joules, the total input energy is 560 Joules.

Show your working:

$$252 \text{ divided by } 560 = 0.45$$

$$\text{The answer multiplied by } 100 = 45 \%$$

Type the answers into the boxes

B) The useful energy output is 120 Joules and the total energy input is 1500 Joules.

$$\boxed{} \text{ divided by } \boxed{} = \boxed{}$$

$$\text{The answer multiplied by } 100 = \boxed{} \%$$

C) The useful energy output is 45 J and the energy input is 300 J

$$\boxed{} \text{ divided by } \boxed{} = \boxed{}$$

$$\text{The answer multiplied by } 100 = \boxed{} \%$$

D) The energy input is 500 J and the useful energy output is 150 J.

$$\boxed{} \text{ divided by } \boxed{} = \boxed{}$$

The answer multiplied by 100 = $\boxed{}\%$

E) An energy saving light bulb has 240 J of electrical energy going into it. The amount of light it outputs is 60 J.

$$\boxed{} \text{ divided by } \boxed{} = \boxed{}$$

The answer multiplied by 100 = $\boxed{}\%$

F) A cow eats 1500 J and she stores it as fat. 495 joules from that food is enough to fuel the cow's living cells. What is the efficiency of this system?

$$\boxed{} \text{ divided by } \boxed{} = \boxed{}$$

The answer multiplied by 100 = $\boxed{}\%$