Energy Efficiency questions

Energy efficiency can be calculated using this equation:

% energy efficiency = (useful energy output ÷ total energy input) x 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 divided by 560 = 0.45

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.

[ ] divided by [ ] = [ ]

The answer multiplied by 100 = [ ] %

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

[ ] divided by [ ] = [ ]

The answer multiplied by 100 = [ ] %

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

[ ] divided by [ ] = [ ]

The answer multiplied by 100 = [ ] %

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

[ ] divided by [ ] = [ ]

The answer multiplied by 100 = [ ] %

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?

[ ] divided by [ ] = [ ]

The answer multiplied by 100 = [ ] %

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