(c) A uranium fuel rod is made from fuel pellets that contain uranium-235 and uranium-238.

Only uranium-235 undergoes nuclear fission in the reactor core.

Energy is released when the uranium-235 nuclei undergo fission.

The box gives some data about a typical uranium fuel pellet.

Total mass of uranium in fuel pellet	0.0088 kg
Percentage (by mass) of uranium-235 in fuel pellet	3.0 %
Mass of uranium-235 atom	3.90×10^{-25} kg
Total energy released from fuel pellet due to fission	2.17×10^{10} J

(i) Calculate the number of uranium-235 atoms in the fuel pellet.

(2)

number of uranium-235 atoms = ...

(ii) Calculate the energy released when the nucleus of a single atom of uranium-235 undergoes fission.

(2)

energy released = ... J

(Total for Question 5 = 9 marks)