6 When a nucleus of americium emits an alpha particle the energy released is 5.64 MeV.

Which of the following expressions gives the decrease in mass in kg of the nucleus when it emits the alpha particle?

☒ **A** $\dfrac{5.64 \times 1.60 \times 10^{-13}}{(3.0 \times 10^{8})^{2}}$

☒ **B** $\dfrac{5.64}{1.60 \times 10^{-13} \times (3.0 \times 10^{8})^{2}}$

☒ **C** $\dfrac{5.64 \times 1.60 \times 10^{-13}}{1.66 \times 10^{-27} \times (3.0 \times 10^{8})^{2}}$

☒ **D** $\dfrac{5.64 \times 1.66 \times 10^{-27}}{1.60 \times 10^{-13} \times (3.0 \times 10^{8})^{2}}$

(Total for Question 6 = 1 mark)