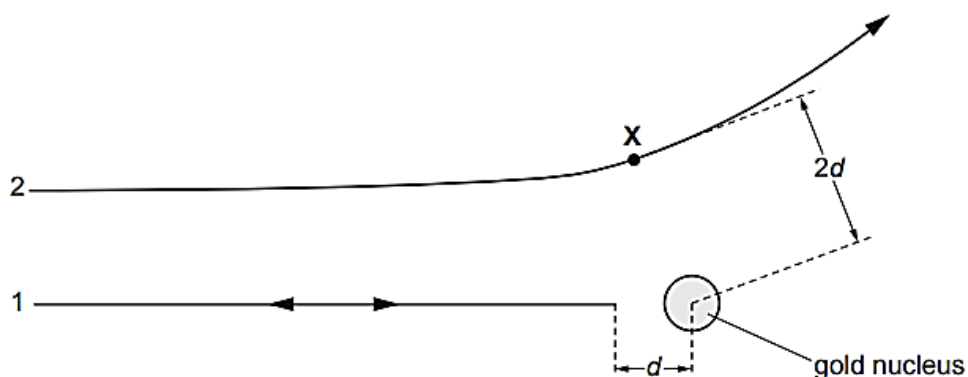


- 29 The diagram shows the path of two alpha particles, each of initial kinetic energy 4.0 MeV, as they are scattered by a gold nucleus.



Alpha particle 1 approaches head-on towards the gold nucleus and is repelled back along its own path, with a closest distance of separation from the nucleus being  $d$ . Alpha particle 2 follows the path shown, with a closest distance of separation from the nucleus being  $2d$  at the point X.

What is the kinetic energy of alpha particle 2 at the point X?

- A** 0.0 MeV      **B** 1.0 MeV      **C** 2.0 MeV      **D** 4.0 MeV