39 When α-particles are directed at gold leaf

1 almost all α-particles pass through without deflection,

2 a few α-particles are deviated through large angles.

What are the reasons for these effects?

	1	2
A	most α-particles have enough energy to pass right through the gold leaf	gold is very dense so a few low energy α-particles bounce back from the gold surface
B	most α-particles miss all gold atoms	a few α-particles bounce off gold atoms
C	the gold nucleus is very small so most α-particles miss all nuclei	occasionally the path of an α-particle is close to a nucleus
D	the positive charge in an atom is not concentrated enough to deflect an α-particle	occasionally an α-particle experiences many small deflections in the same direction

40 The nuclide ^{222}Rn decays in a sequence of stages to form the nuclide ^{206}Pb.