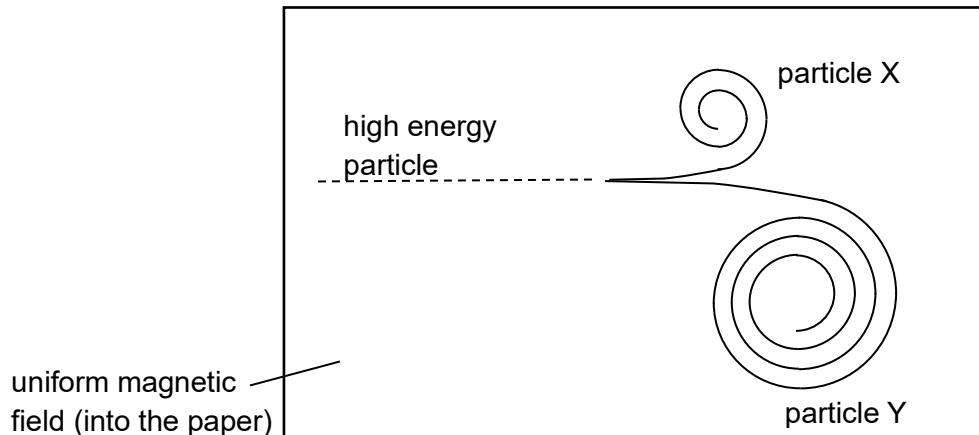


- 24** A high energy particle which carries no charge enters a region of uniform magnetic field directed into the paper.

The particle subsequently disintegrates to form two particles X and Y which have the same mass and same magnitude of charge. The paths of X and Y are shown in the diagram below and the initial radius of Y is twice the initial radius of X.



Which of the following statements is correct?

- A** Particle X is negatively charged, and particle Y is positively charged.
- B** Particle X has a larger momentum than particle Y.
- C** The speeds of both particles are increasing steadily.

- D** The ratio of the initial kinetic energy of particle X to particle Y is 0.25.