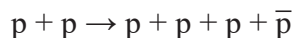


**13** Beams of antiprotons are often used in particle physics experiments.

- (a) Show that the rest mass of an antiproton is about  $900 \text{ MeV}/c^2$ .

(4)

- (b) Antiprotons can be produced by accelerating and colliding two protons moving in opposite directions. A website suggests a possible outcome for a collision between these protons is described by the nuclear equation:



Deduce, by using conservation laws, whether it should be possible to produce an antiproton in this way.

(4)