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Which statement about the nuclides is correct?

- A Neutral atoms of the nuclides have the same number of electrons.
- B Nuclei of the nuclides have different numbers of protons.
- C Nuclei of the nuclides have the same number of nucleons.
- D Nuclei of the nuclides have the same number of neutrons.

39 The charge-to-mass ratio  $r$  of a particle is given by the equation shown.

$$r = \frac{\text{charge on particle}}{\text{mass of particle}}$$

The value of  $r$  is determined for an  $\alpha$ -particle, a  $\beta^+$  particle and a proton p.

Which list shows the particles in order of increasing magnitude of  $r$  from left to right?

- A  $\alpha \rightarrow \beta^+ \rightarrow p$
- B  $\alpha \rightarrow p \rightarrow \beta^+$
- C  $p \rightarrow \alpha \rightarrow \beta^+$
- D  $p \rightarrow \beta^+ \rightarrow \alpha$

40 Which combination of up (u) and down (d) quarks forms a neutron?

- A u u u
- B u u d
- C u d d
- D d d d





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