

Isotope or ion decision fork

Test the nucleus first; then test electron change.

BRANCH 1 ISOTOPE COMPARISON

Carbon-12, Z 6, neutral: p 6, n 6, e 6.

Carbon-13, Z 6, neutral: p 6, n 7, e 6.

Same Z / element; different neutrons / A.

This pair differs in its NUCLEUS.

Do not infer abundance or radioactivity from these cards.

BRANCH 2 CHARGE COMPARISON

Magnesium-24 atom: p 12, n 12, e 12.

Magnesium-24 2+ ion: p 12, n 12, e 10.

Same isotope / nucleus; different electrons.

This pair differs in ELECTRON COUNT.

The card gives charge; it does not show a real reaction.

DECISION: same Z? same A? same e?

Use full counts before naming the relationship.