[Alpha Decay](http://phet.colorado.edu/) Questions
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http://phet.colorado.edu/

Learning Goals: Students will be able to:

- Explain alpha decay process.

- Explain what half-life means in terms of single particles and larger samples.

Lesson Plans and Activity

1. If you read a test question that says:
Hg-202 undergoes alpha decay to Pt-198.
What does that tell you?

A. A particle that has a mass of 4 is given off

B. A particle that has a mass of 4 is absorbed

"emitted" is another way to say "given off"
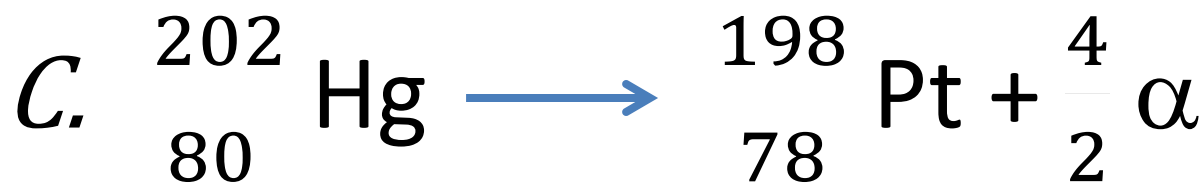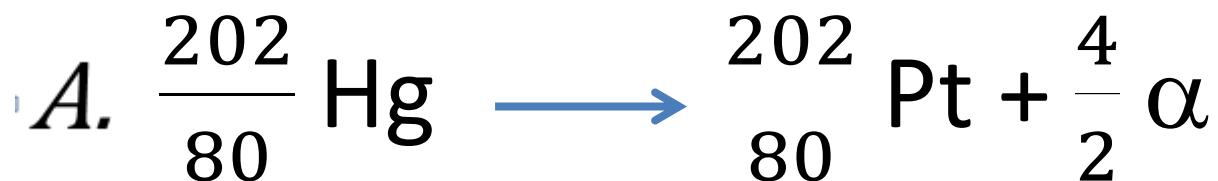
Hg-202 undergoes alpha decay to Pt-198.
2. What else do you know?

A.   The particle emitted also has no charge
B.   The particle emitted also has a charge of 2
C.   The particle emitted also has a charge of 4
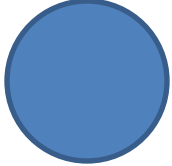D.   The particle emitted also has a charge of -2

Alpha particles are represented as $_2^4 \alpha$

Hg-202 undergoes alpha decay to Pt-198.

3. What would the reaction look like?

A. $^{202}_{80}\text{Hg} \longrightarrow {}^{202}_{80}\text{Pt} + {}^{4}_{2}\alpha$

B. $^{202}_{80}\text{Hg} \longrightarrow {}^{198}_{80}\text{Pt} + {}^{4}_{2}\alpha$

C. $^{202}_{80}\text{Hg} \longrightarrow {}^{198}_{78}\text{Pt} + {}^{4}_{2}\alpha$
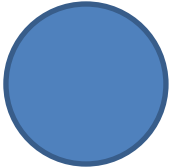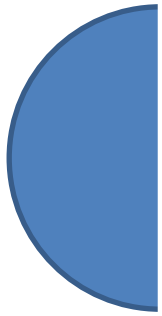
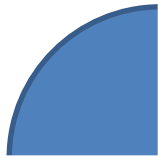Remember mass and charge must be equal on both sides of reaction

4. If you know the half-life of a substance is 50 seconds and the initial amount can be represented as which can you know for certain?

A. After 50 seconds the representation <u>would</u> be

B. After 50 seconds the representation <u>could</u> be

C. If the sample size is small, it could be very different after 50 seconds.

D. A and C

E. B and C

5. If you know the half-life of a substance is 50 seconds and the initial amount can be represented as ● what would you predict the graph to look like after 150 seconds?

A

B

C

D nothing would be left