

Name : _____ Date : _____

Balancing Nuclear Equations



1. Write balanced equations for the following nuclear reactions:

- (A) The isotope C-11 decays by electron capture.
- (B) Curium-246 reacts with carbon-12 to produce nobelium-254 and four neutrons.
- (C) Californium-250 reacts with boron-10 to produce lawrencium-258 and two neutrons.
- (D) Fluorine-18 decays to oxygen-18 by positron emission.
- (E) Sodium-24 decays by beta emission.
- (F) Krypton-76 absorbs a beta particle to form bromine-76.

2. Fill in the blanks to complete the following nuclear reactions.

- (A) ${}^1\text{H}_1 + {}^7\text{Li}_3 \rightarrow$ _____
- (B) ${}^7\text{Be}_4 + {}^1\text{n}_0 \rightarrow {}^1\text{H}_1 +$ _____ $+ {}^4\text{He}_2$
- (C) ${}^{27}\text{Al}_{13} + {}^4\text{He}_2 \rightarrow$ _____ $+ {}^{30}\text{P}_{15}$
- (D) ${}^{63}\text{Cu}_{29} + {}^2\text{H}_1 \rightarrow 2{}^1\text{n}_0 +$ _____
- (E) ${}^9\text{Be}_4 + {}^4\text{He}_2 \rightarrow$ _____ $+ {}^{12}\text{C}_6$
- (F) ${}^{239}\text{Np}_{93} \rightarrow$ ${}^0\text{e}_{-1} +$ _____
- (G) ${}^4\text{He}_2 + {}^{238}\text{U}_{92} \rightarrow 2{}^1\text{n}_0 +$ _____

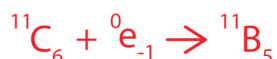
Balancing Nuclear Equations



1.

Answers

(A) The isotope C-11 decays by electron capture.



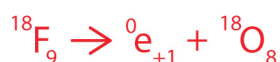
(B) Curium-246 reacts with carbon-12 to produce nobelium-254 and four neutrons.



(C) Californium-250 reacts with boron-10 to produce lawrencium-258 and two neutrons.



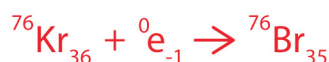
(D) Fluorine-18 decays to oxygen-18 by positron emission.



(E) Sodium-24 decays by beta emission.



(F) Krypton-76 absorbs a beta particle to form bromine-76.



2.

