1. Why do nuclei need neutrons?

(A) To prevent protons from repelling each other out of the nucleus.
(B) To prevent electrons from entering the nucleus.
(C) To add additional energy to the nucleus.
(D) To push protons to the surface of the nucleus for greater attraction to the electrons circling the nucleus.

2. What statement about neutrons is true?

(A) Neutrons are made from two protons minus an electron.
(B) Neutrons are about half the size of a proton.
(C) Neutrons consist of a proton and electron combined.
(D) Neutrons cluster toward the center of the nucleus.

3. One way that neutrons stabilize the nucleus is by _____.

(A) preventing electrons from entering the nucleus
(B) having features of both a proton and an electron
(C) increasing the weight of a nucleus
(D) nudging protons apart

4. Another way neutrons stabilize the nucleus is by _____.

(A) exerting a strong force
(B) pushing protons closer together
(C) neutralizing the force of repulsion between protons
(D) weakening the positive charge on protons

5. The strong force _____.

(A) works over a very short distance
(B) prevents neutrons from ejecting an electron and becoming a proton again
(C) prevents additional energy from entering the nucleus
(D) is weaker than the force of electrical attraction

6. Two isotopes of the same element _____.

(A) weigh the same
(B) have different electrical charges
(C) have the same number of neutrons
(D) have the same number of protons

7. The atomic weight of an element listed in the periodic table _____.

(A) reflects the weight of the most common isotope of that element in nature
(B) reflects the weight of the atom with an average number of neutrons for that element
(C) reflects the average weight of an atom of that element found in nature
(D) reflects the average weight of an atom of that element found in the sample examined

8. The atomic weight, rounded off to the nearest whole number, minus the atomic number equals what?

(A) The number of protons in the nucleus of that element.
(B) The number of neutrons in the nucleus of that element.
(C) The number of electrons in the nucleus of that element.
(D) The number of protons and neutrons in the nucleus of that element.

9. Why does radioactivity only occur in large atoms, atoms larger than iron?

(A) Radioactivity occurs in large atoms because large nuclei have so many protons that no matter how many neutrons the nucleus has, the repulsive force of all those protons makes the nucleus unstable.
(B) Radioactivity only occurs in large atoms because large nuclei have so many neutrons that the nucleus becomes unstable.
(C) Radioactivity only occurs in large atoms because with so many protons and neutrons, all of the individual strong forces destabilize the nucleus.
(D) Radioactivity only occurs in large atoms because large nuclei exert such a strong attraction for the electrons circling the nucleus that periodically an electron enters the nucleus and must be ejected from the nucleus.