____ 13. If 225.6 grams of calcium phosphate are produced in a precipitation reaction, how many moles of the salt have been formed?
    a. $7.273 \cdot 10^{-1}$ mol
    b. $4.403 \cdot 10^{1}$ mol
    c. $1.039 \cdot 10^{1}$ mol
    d. $9.471 \cdot 10^{-1}$ mol

____ 14. Which pair of elements can be classified as noble gases?
    a.   H and He
    b.   Na and K
    c.   Kr and Ar
    d.   N and O

____ 15. How many helium atoms are present in $7.4 \cdot 10^{-3}$ moles of the gas?
    a. $5.6 \cdot 10^{21}$
    b. $1.8 \cdot 10^{22}$
    c. $4.5 \cdot 10^{21}$
    d. $1.2 \cdot 10^{-26}$

____ 16. If 88.2 grams of charcoal (assume pure carbon) is burned in an excess of oxygen, what mass of CO_2 is produced by the reaction?
    a.   44.1 g
    b.   323 g
    c.   113.8 g
    d.   276 g

____ 17. Consider ^{235}U. How many protons are present in this isotope?
    a.   143
    b.   235
    c.   92
    d.   177

____ 18. Which of the following illustrates the balanced reaction of ethyl alcohol with an excess of oxygen to form carbon dioxide and water?
    a. $C_2H_5OH(\ell) + 3\ O_2(g) \rightarrow 2\ CO_2(g) + 3\ H_2O(\ell)$
    b. $3\ C_2H_5OH(\ell) + 7\ O_2(g) \rightarrow 6\ CO_2(g) + 9\ H_2O(\ell)$
    c. $C_2H_5OH(\ell) + 2\ O_2(g) \rightarrow 3\ CO_2(g) + 3\ H_2O(\ell)$
    d. $3\ C_2H_5OH(\ell) + 3\ O_2(g) \rightarrow 2\ CO_2(g) + 6\ H_2O(\ell)$

____ 19. Consider ^{203}Hg. How many neutrons are present in this isotope?
    a.   203
    b.   80
    c.   283
    d.   123

____ 20. Ammonia is manufactured using the reaction: $N_2(g) + 3\ H_2(g) \rightarrow 2\ NH_3(g)$
How much ammonia can be produced in the reaction of $2.04 \cdot 10^{-3}$ mol of nitrogen and $6.83 \cdot 10^{-3}$ mol of hydrogen?
    a. $4.08 \cdot 10^{-3}$ mol
    b. $5.20 \cdot 10^{-3}$ mol
    c. $6.83 \cdot 10^{-3}$ mol
    d. $7.47 \cdot 10^{-3}$ mol