Name: $\qquad$

1. What is the atomic number for the following atoms?
$\qquad$
He
Co $\qquad$
$\qquad$ Pa $\qquad$
2. How many neutrons are in the following atoms?
$\qquad$
He
Co $\qquad$
Hg $\qquad$

Pa $\qquad$
3. What is the average atomic mass for the following atoms
a. $\mathrm{X}-45$ ( $45 \%$ ), X-46 (55\%)
b. Gk-123 (10\%), Gk-125 (30\%), Gk-126 (60\%)
4. Circle the more common isotope?
a. $\mathrm{Ca}-40$ or $\mathrm{Ca}-41$
b. $\mathrm{Br}-79$ or $\mathrm{Br}-80$
c. $\mathrm{Na}-22$ or $\mathrm{Na}-23$
5. What is the molar mass for the following?
a. Ca $\qquad$
b. Mn $\qquad$
c. Water $\qquad$
d. $\mathrm{Mn}(\mathrm{OH})_{2}$ $\qquad$
6. How many moles are there in 456 grams of Calcium?
7. How many moles are there in 456 grams of Silicon?
8. How many grams in 12 moles of $\mathrm{H}_{2} \mathrm{O}_{2}$ ?
9. How many moles are there in 85211 grams of Uranium?
10. How many particles of gold are present in 45 moles of gold?
11. How many moles are there in 50 grams of $\mathrm{CO}_{2}$ ?
12. How many moles are there in $2.66 \times 10^{24}$ atoms of Iron?
13. How many molecules of $\mathrm{Fe}_{2} \mathrm{O}_{3}$ are there in 15.5 moles of $\mathrm{Fe}_{2} \mathrm{O}_{3}$ ?
14. How many moles are there in $8.88 \times 10^{28}$ atoms of Iron?
15. How many moles are there in $4.5 \times 10^{20}$ molecules of water?

