

Homework #1

Solutions (2nd installment)

1-39.

	Z	A	e
³¹ P	15	-	-
¹⁸ O	-	-	8
	19	39	19
⁵⁸ Ni	-	58	-

	Z	A	e
³¹ P	15	31	15
¹⁸ O	8	18	8
³⁹ K	19	39	19
⁵⁸ Ni	28	58	28

1-88. Element X is a metal whose chemical properties are similar to potassium. There is only one isotope of element X. The mass of X in amu is 22.98976. Use the trends in masses in Table 1.4 to identify element X.

Answer: It is clear from the table that for the light elements the ratio of the atomic number to atomic mass is very close to 1:2. So the integer nearest to $\frac{1}{2}$ of 22.98976 is 11. That makes the element sodium.