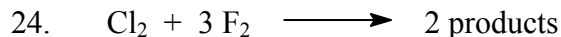
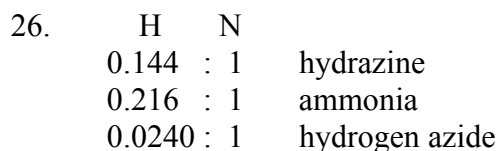
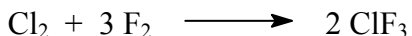


Chapter 2: 24, 26, 40, 52, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82



Must balance: 2 Cl and 6 F in 2 molecules of product. Dividing by 2, gives 1 Cl and 3 F in 1 molecule of product: ClF_3 (most metallic element given first).



$$\frac{0.216}{0.144} = 1.5 \times 2 = 3 \quad \text{Small, whole number combining ratio}$$

$$\frac{0.216}{0.0240} = 9 \quad \text{Small, whole number combining ratio}$$

$$\frac{0.144}{0.0240} = 6 \quad \text{Small, whole number combining ratio}$$

Hydrazine is actually N_2H_4
Ammonia is actually NH_3
Hydrogen azide is actually HN_3

The ratio of H in N_2H_6 (2 x NH_3) to H in N_2H_4 (same number of N's) is 6/4 or 1.5.

The ratio of H in N_6H_{18} (6 x NH_3) to H in H_2N_6 (same number of N's) is 18/2 or 9.

The ratio of H in N_6H_{12} (3 x N_2H_4) to H in H_2N_6 (same number of N's) is 12/2 or 6.

40. Tc Transition metal

Pm Lanthanide

52.	isotope	protons	neutrons	electrons	charge
	${}_{92}^{238}\text{U}$	<u>92</u>	<u>146</u>	<u>92</u>	0
	${}_{20}^{40}\text{Ca}^{2+}$	20	20	<u>18</u>	2+
	${}_{23}^{51}\text{V}^{3+}$	23	28	20	<u>3+</u>
	${}_{39}^{89}\text{Y}$	<u>39</u>	<u>50</u>	<u>39</u>	0
	${}_{35}^{79}\text{Br}^{-}$	35	44	36	<u>1-</u>
	${}_{15}^{31}\text{P}^{3-}$	15	16	<u>18</u>	3-

- 62.
- mercury(I) oxide
 - iron(III) bromide
 - cobalt(II) sulfide
 - titanium(IV) chloride

- 64.
- | | | | |
|----|-------------------|----|---------------------|
| a. | cesium fluoride | d. | manganese(IV) oxide |
| b. | lithium nitride | e. | titanium(IV) oxide |
| c. | silver(I) sulfide | f. | strontium phosphide |

- 66.
- barium sulfite
 - sodium nitrite
 - potassium permanganate
 - potassium dichromate

- 68.
- sulfur dioxide
 - iodine trichloride
 - diphosphorus pentasulfide
 - dinitrogen tetroxide

- 70.
- | | | | |
|----|---------------------|----|-------------------|
| a. | acetic acid | g. | sulfuric acid |
| b. | ammonium nitrite | h. | strontium nitride |
| c. | cobalt(III) sulfide | i. | aluminum sulfite |
| d. | iodine monochloride | j. | tin(IV) oxide |
| e. | lead(II) phosphate | k. | sodium chromate |
| f. | potassium iodate | l. | hypochlorous acid |

72. a. SF₂ g. NH₄C₂H₃O₂
 b. SF₆ h. NH₄HSO₄
 c. NaH₂PO₄ i. Co(NO₃)₃
 d. Li₃N j. Hg₂Cl₂
 e. Cr₂(CO₃)₃ k. KClO₃
 f. SnF₂ l. NaH

74. a. (NH₄)₂HPO₄ g. HBr
 b. Hg₂S h. HBrO₂
 c. SiO₂ i. HBrO₄
 d. Na₂SO₃ j. KHS
 e. Al(HSO₄)₃ k. CaI₂
 f. NCl₃ l. CsClO₄

76. a. Fe²⁺ p⁺ 26 e- 24 FeO
 b. Fe³⁺ p⁺ 26 e- 23 Fe₂O₃
 c. Ba²⁺ p⁺ 56 e- 54 BaO
 d. Cs⁺ p⁺ 55 e- 54 Cs₂O
 e. S²⁻ p⁺ 16 e- 18 Al₂S₃
 f. P³⁻ p⁺ 15 e- 18 AlP
 g. Br⁻ p⁺ 35 e- 36 AlBr₃
 h. N³⁻ p⁺ 7 e- 10 AlN

78. a. Te
 b. Rb
 c. Ar
 d. At

80. X²⁺, ion has 86 e-, atom has 88 e- and 88 p⁺. The atom is Ra. 230 - 88 = 142 n^o.

82. sodium arsenate
 arsenic acid
 magnesium antimonate