Name : ---------- Date : ----------

Balancing and Identifying Chemical Equations

Classify the following reactions and balance them.

(1) $Al_2(SO_4)_3 + BaCl_2 \rightarrow BaSO_4 + AlCl_3$ Type of reaction:

(2) $Al_2S_3 \rightarrow Al + S$ Type of reaction:

(3) $NaOH + CuSO_4 \rightarrow Na_2PO_4 + Cu(OH)_2$ Type of reaction:

(4) $Fe + H_2SO_4 \rightarrow Fe_2SO_4 + H_2$ Type of reaction:

(5) $C_4H_{12} + O_2 \rightarrow CO_2 + H_2O$ Type of reaction:

(6) $H_2S + O_2 \rightarrow SO_2 + H_2O$ Type of reaction:

(7) $C_5H_9O + O_2 \rightarrow CO_2 + H_2O$ Type of reaction:

(8) $Al + NiBr_2 \rightarrow AlBr_3 + Ni$ Type of reaction:

(9) $Al + O_2 \rightarrow Al_2O_3$ Type of reaction:

(10) $H_2O_2 \rightarrow H_2O + O_2$ Type of reaction:

(11) $K + Cl_2 \rightarrow KCl$ Type of reaction:

(12) $Na + MgCl_2 \rightarrow NaCl + Mg$ Type of reaction:

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Answers

(1) 1 $Al_2(SO_4)_3$ + 3 $BaCl_2$ → 3 $BaSO_4$ + 2 $AlCl_3$ Type of reaction: Double displacement

(2) 1 Al_2S_3 → 2 Al + 3 S Type of reaction: Decomposition

(3) 2 NaOH + 1 $CuSO_4$ → 1 Na_2PO_4 + 1 $Cu(OH)_2$ Type of reaction: Double displacement

(4) 1 Fe + 1 H_2SO_4 → 1 Fe_2SO_4 + 1 H_2 Type of reaction: Single displacement

(5) 1 C_4H_{12} + 7 O_2 → 4 CO_2 + 6 H_2O Type of reaction: Combustion

(6) 2 H_2S + 3 O_2 → 2 SO_2 + 2 H_2O Type of reaction: Redox

(7) 4 C_5H_9O + 27 O_2 → 20 CO_2 + 18 H_2O Type of reaction: Combustion

(8) 2 Al + 3 $NiBr_2$ → 2 $AlBr_3$ + 3 Ni Type of reaction: Single displacement

(9) 4 Al + 3 O_2 → 2 Al_2O_3 Type of reaction: Synthesis

(10) 2 H_2O_2 → 2 H_2O + 1 O_2 Type of reaction: Decomposition

(11) 2 K + 1 Cl_2 → 2 KCl Type of reaction: Synthesis

(12) 2 Na + 1 $MgCl_2$ → 2 NaCl + 1 Mg Type of reaction: Single displacement