



# **Instituto Tecnológico Nacional**

**Instituto Tecnológico de León**

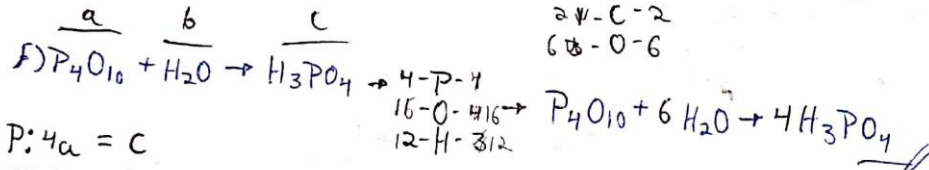
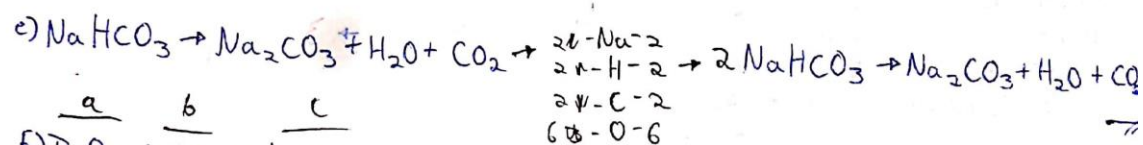
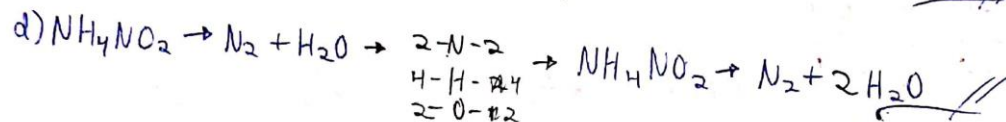
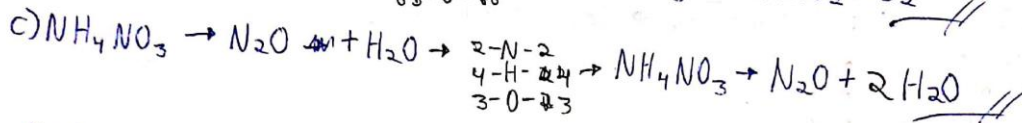
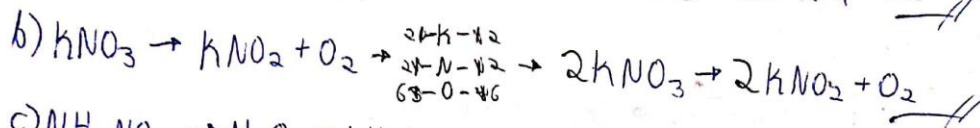
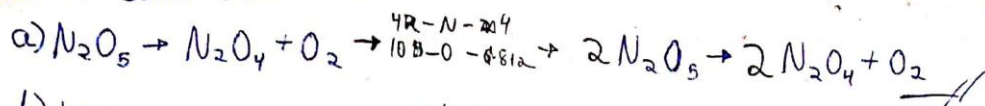
**Química**

**“Balanceo de Ecuaciones Químicas”**

**García Solís Francisco**

**17/05/2020**

García Solís Francisco



P:  $4a = c$

O:  $10a + b = 4c$

H:  $2b = 3c$

$\begin{matrix} a=1 \\ c=4 \\ b=6 \end{matrix}$

$b = 4c - 10a$

$2b = 3(4a)$

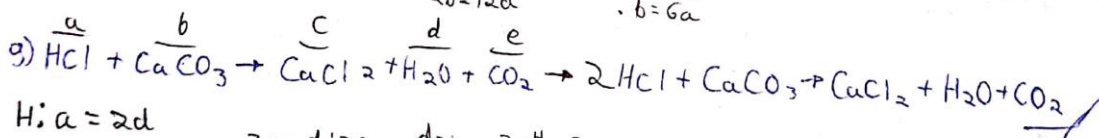
$2b = 12a$

$10a + b = 4(4a)$

$10a + b = 16a$

$b = 16a - 10a$

$b = 6a$



H:  $a = 2d$

Cl:  $a = 2c$

Ca:  $b = c$

C:  $b = c$

O:  $3b = d + 2e$

$\begin{matrix} 3e = d + 2c \\ d = 3c - 2e \\ d = e \end{matrix}$

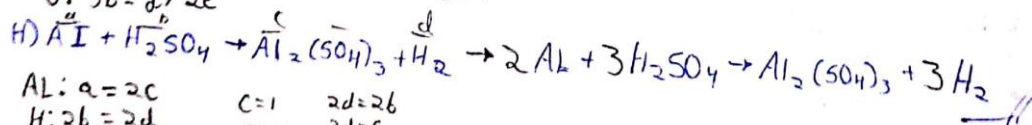
$d = 1$

$a = 2$

$e = 1$

$b = 1$

$c = 1$



Al:  $a = 2c$

H:  $2b = 2d$

S:  $b = 3c$

O:  $4b = 12c$

$c = 1$

$a = 2$

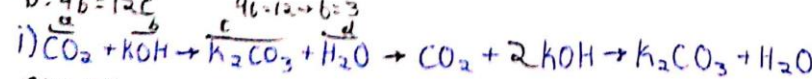
$b = 3$

$4b = 12 \rightarrow b = 3$

$2d = 2b$

$2d = 6$

$d = 3$



C:  $a = c$

O:  $2a + b = 3c + d$

K:  $b = 2c$

H:  $b = 2d$

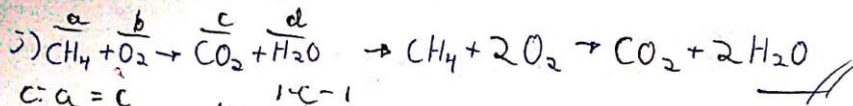
$d = 1$

$b = 2$

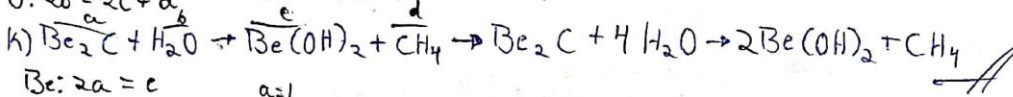
$c = 1$

$a = 1$

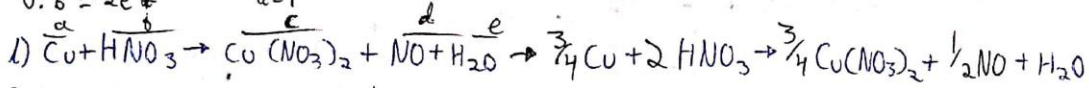
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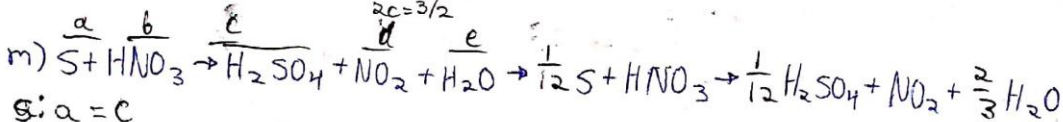
C:  $a = c$   
 H:  $4a = 2d$   
 O:  $2b = 2c + d$



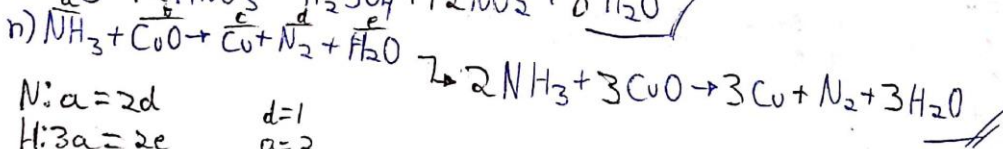
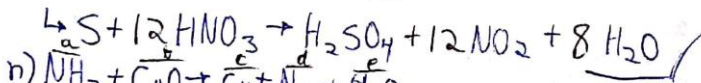
Be:  $2a = c$   
 C:  $a = d$   
 H:  $2b = 2c + 4d$   
 O:  $b = 2c$



Cu:  $a = c$   
 H:  $b = 2e$   
 N:  $b = 2c + d$   
 O:  $3b = 6c + d + e$

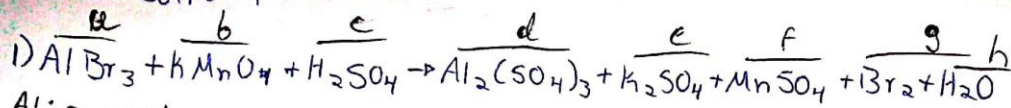


S:  $a = c$   
 H:  $b = 2c + 2e$   
 N:  $b = d$   
 O:  $3b = 4c + 2d + e$



N:  $a = 2d$   
 H:  $3a = 2e$   
 Cu:  $b = c$   
 O:  $b = e$

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Al:  $a = 2d$

Br:  $3a = 2h$

K:  $b = 2e$

Mn:  $b = f$

O:  $4b + 4c = 12d + 4e + 4f + h$

H:  $2c = 2h$

S:  $c = 3d + e + f$

$\frac{d=1}{a=2}$   
 $\frac{g=3}{g=3}$

$4b + 12d + 4e + 4f = 12d + 4e + 4f + h$

$4b = h$

$h = 4$

$b = 1$

$c = 4$

$f = 1$

$e = 1/2$

$d = 5/6$

$a = 5/3$

$g = 5/2$

$3d = c - e - f$

$d = \frac{c - e - f}{3}$

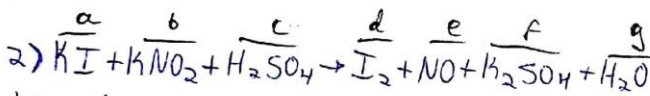
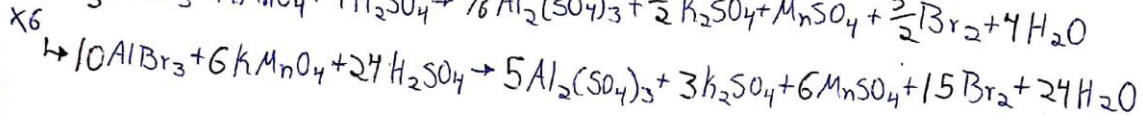
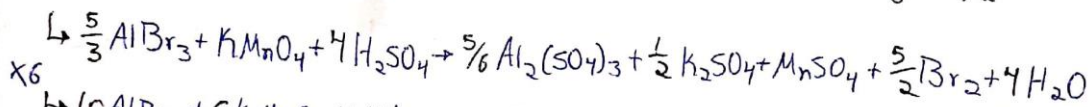
$g = \frac{3a}{2}$

$d = 4 - 1/2 - 1$

$d = 3 - 1/2$

$d = 5/2/3$

$d = 5/6$



K:  $a + b = 2f$

I:  $a = 2d$

N:  $b = e$

O:  $2b + 4c = e + 4f + g$

H:  $2c = 2g$

S:  $c = f$

$\frac{d=1}{a=2}$   
 $\frac{b=1}{b=1}$   
 $\frac{c=1}{c=1}$   
 $\frac{e=1}{e=1}$   
 $\frac{f=1}{f=1}$   
 $\frac{g=1}{g=1}$

$2b + 4c = e + 4f + g$

$2b + 4c = 1 + 4 + 1$

$2b + 4c = 6$

$3c = b + 2a$

$a = 2f - b$

$a = 2 - 1$

$a = 1$

$d = 1/2$

$2c + 4f = e + 4f + g$

$e = g$

$2c = 2e$

$c = e$

$e = f$

$c = e$

$b = c$

$e = 1$

$g = 1$

$c = 1$

$b = 1$

$f = 1$

$a = 1$

$c = 2$

$g = 2$

$c = 2$

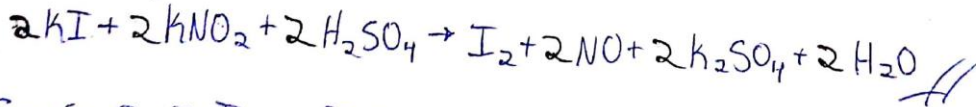
$b = 2$

$f = 2$

$a = 2$

$d = 1/2$

$d = 1$



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