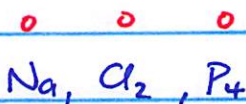


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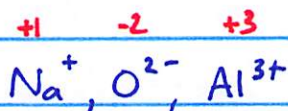
Ox State (or #)

- Rules for assigning:
to each atom

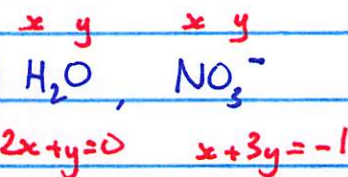
1. Element = 0



2. Monatomic ion = charge



3. $\sum_{\text{ea. atom}} \text{ox. states} = \text{charge}$



4. Gr IA: +1
2A: +2



5. Assign other non-metal elements using the following table:

- go in priority order.

↑ increasing priority

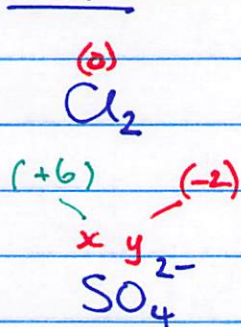
F	-1
H	+1
O	-2
gp 7A	-1
6A	-2
5A	-3

- Use the rules in order (1-5),
and in priority (#5) for
all atoms, except last 1.

o last atom we get using rule #3.

example

ox #: ±#
charge: #±

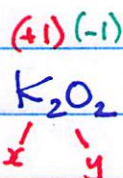
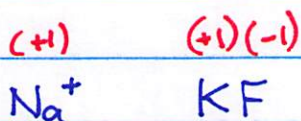


$$x + 4y = -2$$

$$\Rightarrow x + 4(-2) = -2$$

$$\Rightarrow x - 8 = -2$$

$$x = +6$$

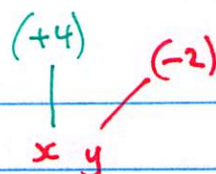


$$2x + 2y = 0$$

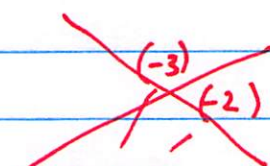
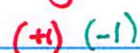
$$2(+1) + 2y = 0$$

$$2 + 2y = 0$$

$$\Rightarrow y = -1$$

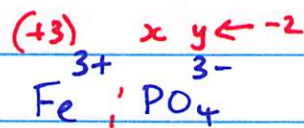


$$x + 2y = 0$$



$$x + y + 4z = 0$$

Forgot that it contains
a monatomic ion!!



$$x + 4y = -3$$

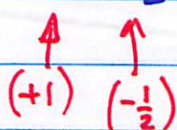
$$x + 4(-2) = -3$$

$$x - 8 = -3$$

$$x = +5$$

Can be fractions!

$$x + 2y = 0$$

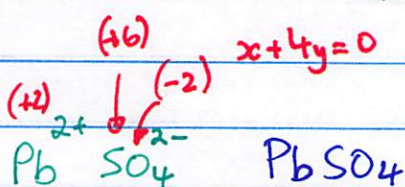
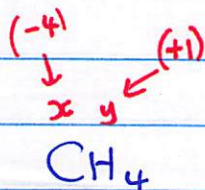


$$\Rightarrow +1 + 2y = 0$$

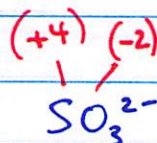
$$\Rightarrow 2y = -1$$

$$\Rightarrow y = -1/2$$

For you:



$$x + 4y = 0$$



$$x + 3(-2) = -2$$

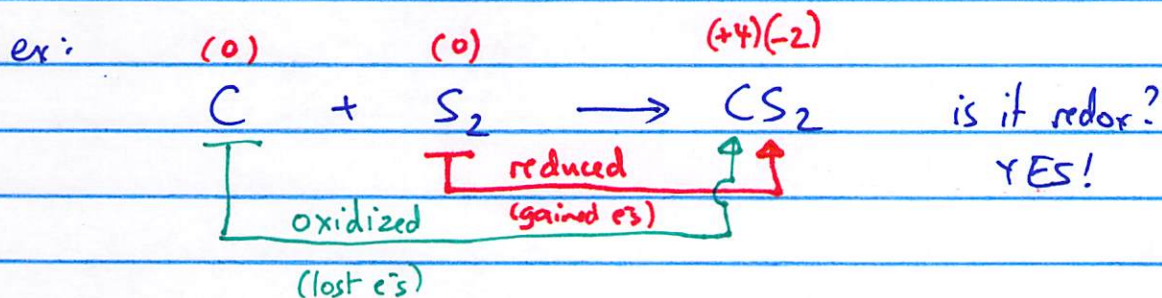
$$x - 6 = -2$$

$$x = +4$$

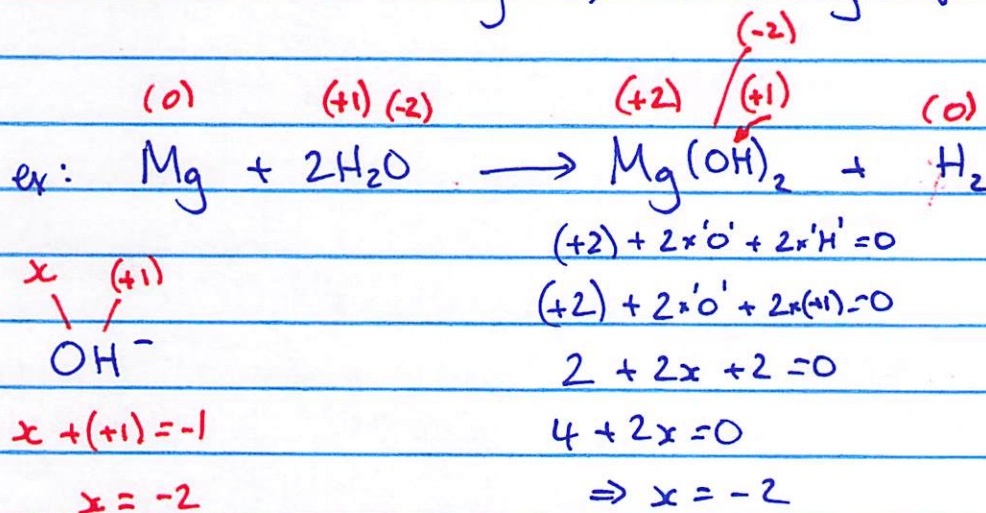
Lead(II) sulfate

think of
the ions!

Identifying Redox rxns



C was oxidized (by S₂, the oxidizing agent)
 S₂ was reduced (by C, the reducing agent)



Mg was oxidized (by H₂O, the ox. agent)
 H₂O was reduced (by Mg, the red. agent).