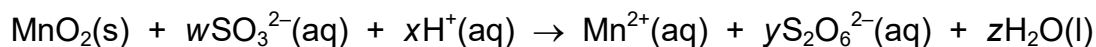
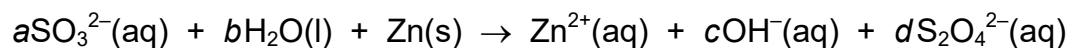


9 Sulfite ions, SO_3^{2-} , react separately with zinc and with manganese dioxide.

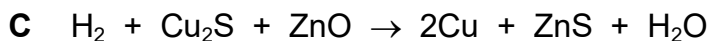
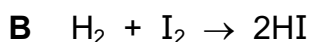
a , b , c , d , w , x , y and z are all whole numbers.



Which numbers are correct for a , b , w and x ?

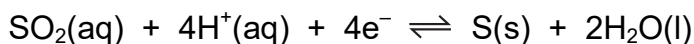
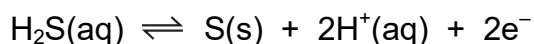
	a	b	w	x
A	1	2	2	4
B	2	2	2	4
C	1	2	4	2
D	2	2	4	2

10 Which equation shows hydrogen acting as an oxidising agent?



3 The reaction of hydrogen sulfide with sulfur dioxide gives sulfur as one of the products.

The two relevant redox equations are shown.



How many moles of hydrogen sulfide are needed to react with sulfur dioxide to produce 1 mol of sulfur?

A $\frac{1}{3}$ mol

B $\frac{2}{3}$ mol

C $\frac{3}{2}$ mol

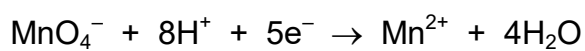
D 2 mol

11 In which substance is the average oxidation number of sulfur the highest?



11 Acidified potassium manganate(VII) reacts with iron(II) ethanedioate, FeC_2O_4 .

The reactions taking place are shown.



How many moles of iron(II) ethanedioate react with **one** mole of potassium manganate(VII)?

A 0.60

B 1.67

C 2.50

D 5.00