1. Use the information to determine the concentration of the hydrochloric acid.

* A 25 cm3 sample of hydrochloric acid is sucked into a pipette and transferred into a 250 cm3 volumetric flask. The solution is made up to the mark.
* 25 cm3 of the diluted acid is transferred into a conical flask using a pipette.
* A burette is used to neutralise the acid with 0.100 mol dm-3 sodium hydroxide.

Hydrochloric acid reacts with sodium hydroxide according to the equation:

HCl(aq) + NaOH(aq) 🡺 NaCl(aq) + H2O(l)

* 1. The average titre of the sodium hydroxide solution was 30.00 cm3. Calculate the number of moles in the average titre.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mol (1)

* 1. Determine the number of moles in the diluted sample of hydrochloric acid, and hence the concentration of the diluted acid.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mol dm-3 (2)

* 1. Calculate the concentration of the undiluted hydrochloric acid in mol dm-3.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mol dm-3 (1)

* 1. Calculate the concentration of the hydrochloric acid in g dm-3.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ g dm-3 (2)

1. Use the information to determine the concentration of the nitric acid.

* A 10 cm3 sample of nitric acid is sucked into a pipette and transferred into a 100 cm3 volumetric flask. The solution is made up to the mark.
* 25 cm3 of the diluted acid is transferred into a conical flask using a pipette.
* A burette is used to neutralise the acid with 0.150 mol dm-3 sodium hydroxide.

Nitric acid reacts with sodium hydroxide according to the equation:

HNO3 (aq) + NaOH(aq) 🡺 NaNO3 (aq) + H2O(l)

* 1. The average titre of the sodium hydroxide solution was 23.33 cm3. Calculate the number of moles in the average titre.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mol (1)

* 1. Determine the number of moles in the diluted sample of nitric acid, and hence the concentration of the diluted acid.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mol dm-3 (2)

* 1. Calculate the concentration of the undiluted nitric acid in mol dm-3.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mol dm-3 (1)

* 1. Calculate the concentration of the nitric acid in g dm-3.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ g dm-3 (2)

1. Use the information to determine the concentration of the sulfuric acid.

* A 25 cm3 sample of sulfuric acid is sucked into a pipette and transferred into a 500 cm3 volumetric flask. The solution is made up to the mark.
* 25 cm3 of the diluted acid is transferred into a conical flask using a pipette.
* A burette is used to neutralise the acid with 0.100 mol dm-3 sodium hydroxide.

Sulfuric acid reacts with sodium hydroxide according to the equation:

H2SO4 (aq) + 2NaOH(aq) 🡺 Na2SO4(aq) + 2H2O(l)

* 1. The average titre of the sodium hydroxide solution was 25.00 cm3. Calculate the number of moles in the average titre.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mol (1)

* 1. Determine the number of moles in the diluted sample of sulfuric acid, and hence the concentration of the diluted acid.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mol dm-3 (2)

* 1. Calculate the concentration of the undiluted sulfuric acid in mol dm-3.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mol dm-3 (1)

* 1. Calculate the concentration of the sulfuric acid in g dm-3.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ g dm-3 (2)

1. Use the information to determine the concentration of the hydrochloric acid.

* A 10 cm3 sample of hydrochloric acid is sucked into a pipette and transferred into a 500 cm3 volumetric flask. The solution is made up to the mark.
* 25 cm3 of the diluted acid is transferred into a conical flask using a pipette.
* A burette is used to neutralise the acid with 0.050 mol dm-3 potassium hydroxide.

Hydrochloric acid reacts with potassium hydroxide according to the equation:

HCl (aq) + KOH(aq) 🡺 KCl(aq) + H2O(l)

* 1. The average titre of the potassium hydroxide solution was 20.00 cm3. Calculate the number of moles in the average titre.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mol (1)

* 1. Determine the number of moles in the diluted sample of hydrochloric acid, and hence the concentration of the diluted acid.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mol dm-3 (2)

* 1. Calculate the concentration of the undiluted hydrochloric acid in mol dm-3.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mol dm-3 (1)

* 1. Calculate the concentration of the hydrochloric acid in g dm-3.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ g dm-3 (2)