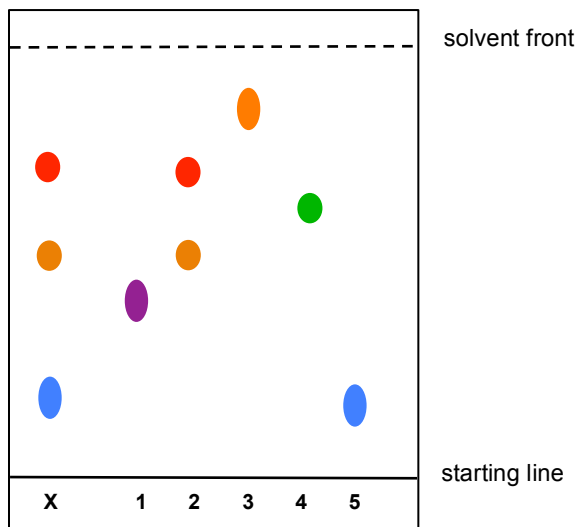




MORE CHROMATOGRAPHY

A student analysed substance **X** by paper chromatography, comparing it to five other substances (**1-5**).

The student drew a starting line on the paper with a pencil and placed spots of the samples on the line. The paper was hung in a beaker of ethanol, with the ethanol being below the height of the samples on the line. The ethanol soaked up the paper. When it was near the top, it was removed from the beaker and the solvent front marked on the paper.



1 Why is the starting line drawn in pencil?

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2 Why is the level of the solvent in the beaker below the sample line?

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3 What is the stationary phase in this experiment?

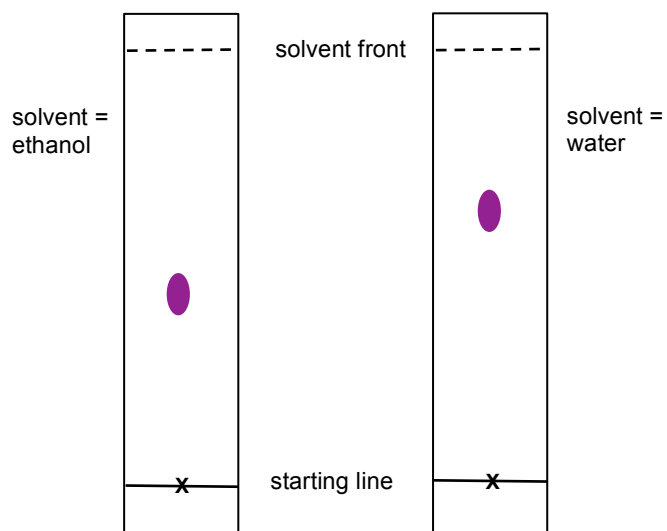
4 What is the mobile phase in this experiment?

5 Explain, by referring to the stationary and mobile phases, why the samples move at different speeds during the experiment.

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6 Which of samples **1-5** are in sample **X**?

The chromatogram of sample 1 in ethanol was compared to that in water. The results are shown.



7 Calculate the R_f value for sample 1 in each solvent.

R_f in ethanol

R_f in water

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8 Explain, by referring to the stationary and mobile phases, why sample 1 has different R_f values in different solvents.

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