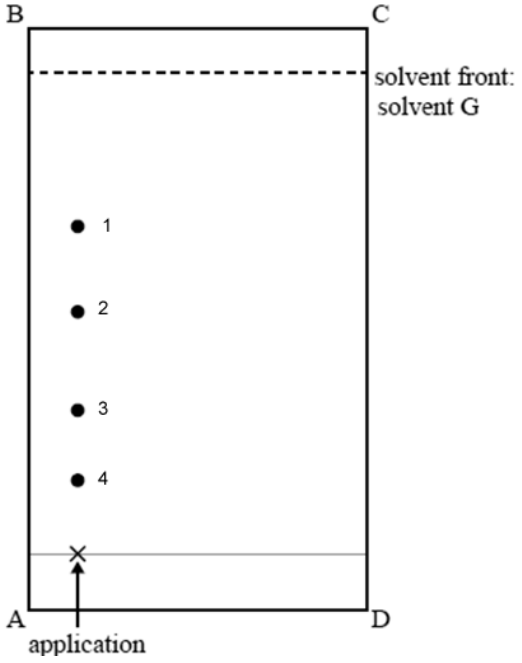
Friday Worksheet **Name: ……**
Chromatography 5

1) A drop that contains a mixture of five amino acids was applied to a thin layer chromatography plate. The plate was placed in solvent G and the chromatogram, shown on the right, was obtained.



The Rf values for each of the amino acids in solvent G are provided in Table 1 below.

a) Name the amino acid that corresponds to spot 3.
Aspartate

b) The plate was dried, rotated through 90° in an anticlockwise direction and then placed in solvent F to obtain chromatogram II below. Circle the spot on chromatogram II that represents alanine

c) Explain why only four spots are present in chromatogram I while five spots are present in chromatogram II.
In chromatogram I both alanine and threonine have the same R_f value with solvent G but with solvent F they have different R_f values.

d) Which amino acid least adsorbs to the stationary phase when solvent F was used? Give a reason.
Aspartate.
It moves further from the origin than all the other amino acids.

Table 1. R_f values in solvent G

amino acid	R_f (solvent G)
alanine	0.51
arginine	0.16
threonine	0.51
tyrosine	0.68
aspartate	0.30