Chromatography 1
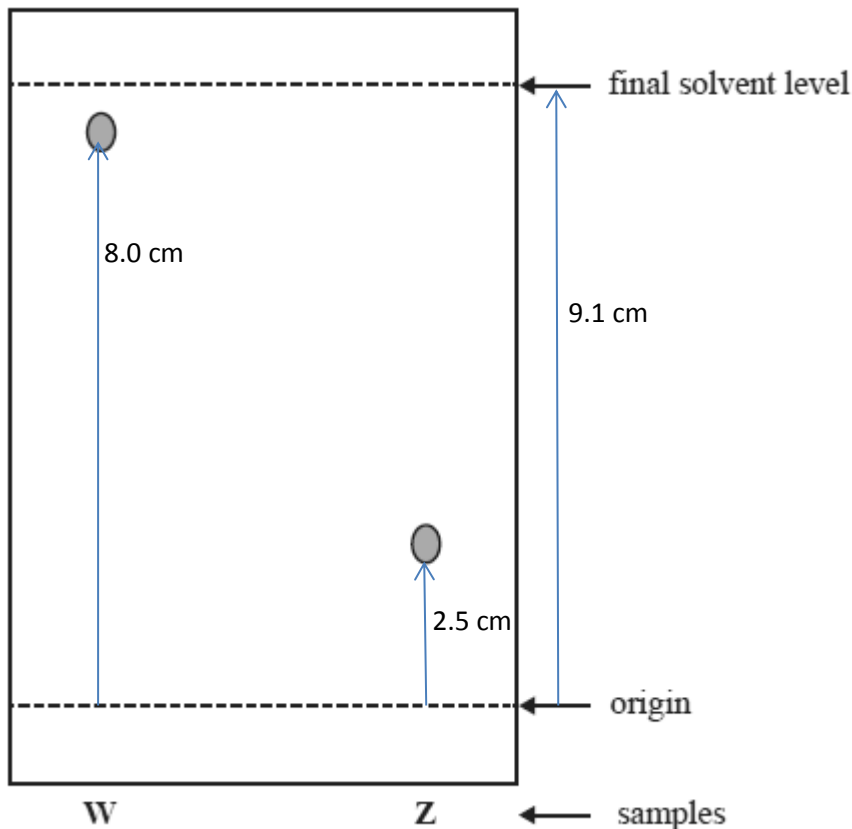
1) Two different food dye samples, W and Z were compared using thin layer chromatography as shown below.

final solvent level

8.0 cm

9.1 cm

2.5 cm

origin

W   Z   ← samples

a) Calculate the R_f value of W and Z
   W = 8.0/9.1 = 0.88, Z =2.5/9.1 = 0.28
b) Which dye is more strongly adsorbed?
   Z
c) Explain how dyes W and Z can be identified?
   Under these conditions they have a unique R_f value which can be used to identify these compounds
d) On the right is another chromatogram of a food substance containing food dye. Is dye "W" present? Explain.
   Yes
   C has an R_f value of 0.88 same as W. If each chromatogram was run under identical conditions then the R_f value is identical to W.

final solvent level

5.3 cm   6.0 cm

2.0 cm

1.0 cm   origin

A   B   C   ← samples