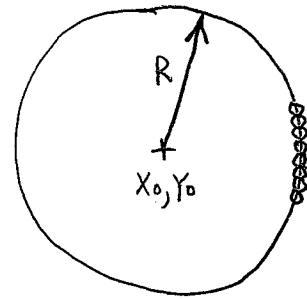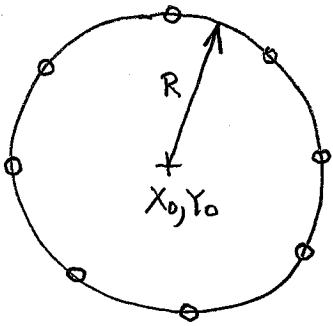# Homework 5   General LS & Error Prop.

The same circle is observed twice as follows with both the
x & y coordinates observed :

x	y
599.947	1999.960
570.563	2070.783
500.016	2099.962
429.358	2070.625
399.995	1999.988
429.305	1929.305
499.957	1899.998
570.702	1929.321

$\sigma_x = \sigma_y = 0.04$

x	y
596.181	1972.492
597.772	1979.213
598.966	1986.027
599.756	1993.101
599.962	2000.019
599.745	2007.032
598.972	2013.919
597.842	2020.846

For each case :

- Make General LS adjustment to find $\hat{X}_0, \hat{Y}_0, \hat{R}$

- Make global test on reference variance @ $\alpha = .05$
     (2-sided)

- <u>Irrespective</u> of outcome of global test,

     ▷ assume <u>pass</u> and make 99% conf. interval for R,
        99% conf. ellipse for X_0, Y_0, and 99% conf. circle for
        X_0, Y_0

     ▷ assume <u>not pass</u> and make 99% conf. interval for R,
        and 99% conf. ellipse for X_0, Y_0.

Q: Is there a lesson here about measurement layout ?