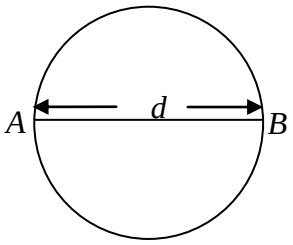
TRINITY COLLEGE NABBINGO
END OF TERM II EXAMINATIONS
S.3 PHYSICS PAPER 3
TIME: 1 HOUR

***INSTRUCTIONS***

- *Attempt **all** parts of the question.*
- *Record you observations as soon as they are made in a suitable table drawn up in advance.*

1. In this experiment you will determine the density of water.
   (a) Draw an outline of the base of the smaller beaker and measure its diameter, ***d***,




   (b) Place 100g mass in the smaller beaker and pour 200cm$^3$ of water into the larger beaker.

   (c) Read from the scale and record the depth, $\boldsymbol{h_0}$ of the water.

   (d) Place the smaller beaker into the larger beaker. Record the new depth, $h_1$.

   (e) Calculate the increase in depth, $\boldsymbol{X_0}$.

   (f) Pour carefully a volume, ***V*** of 20cm$^3$ of water into the smaller beaker. Read and record the new value of depth, $\boldsymbol{h_1}$ and calculate the increase in depth, $x$.

   (g) Repeat procedure (f) above for values of V = 40, 60, 80 and 100cm$^3$.

   (h) Record your results in a suitable table including values of $\frac{x}{v}$.

   (i) Find the average of $\frac{x}{v}$ and call it S.

   (j) Calculate the density, $\wr$ of water form $\wr = \frac{4}{\pi d^2 S}$ where $\pi = 3.14$

**END**