# WAKISSHA
## MARKING GUIDE
## Uganda Certificate of Education
## PHYSICS 535/3

1. Experiment to determine the mass of a metre rule.

G = 49.8cm

X = 2.0cm

d = 27.9cm

$d_1$ = 19.9cm

**TABLE OF RESULTS**

| x (cm) | d (cm) | $d_{1(cm)}$ |
|---|---|---|
| 2.0 | 27.9 | 19.9 |
| 4.0 | 26.8 | 19.0 |
| 6.0 | 25.6 | 18.2 |
| 8.0 | 24.3 | 17.5 |
| 10.0 | 23.3 | 16.5 |
| 12.0 | 22.0 | 15.8 |

m = 100D

***where***

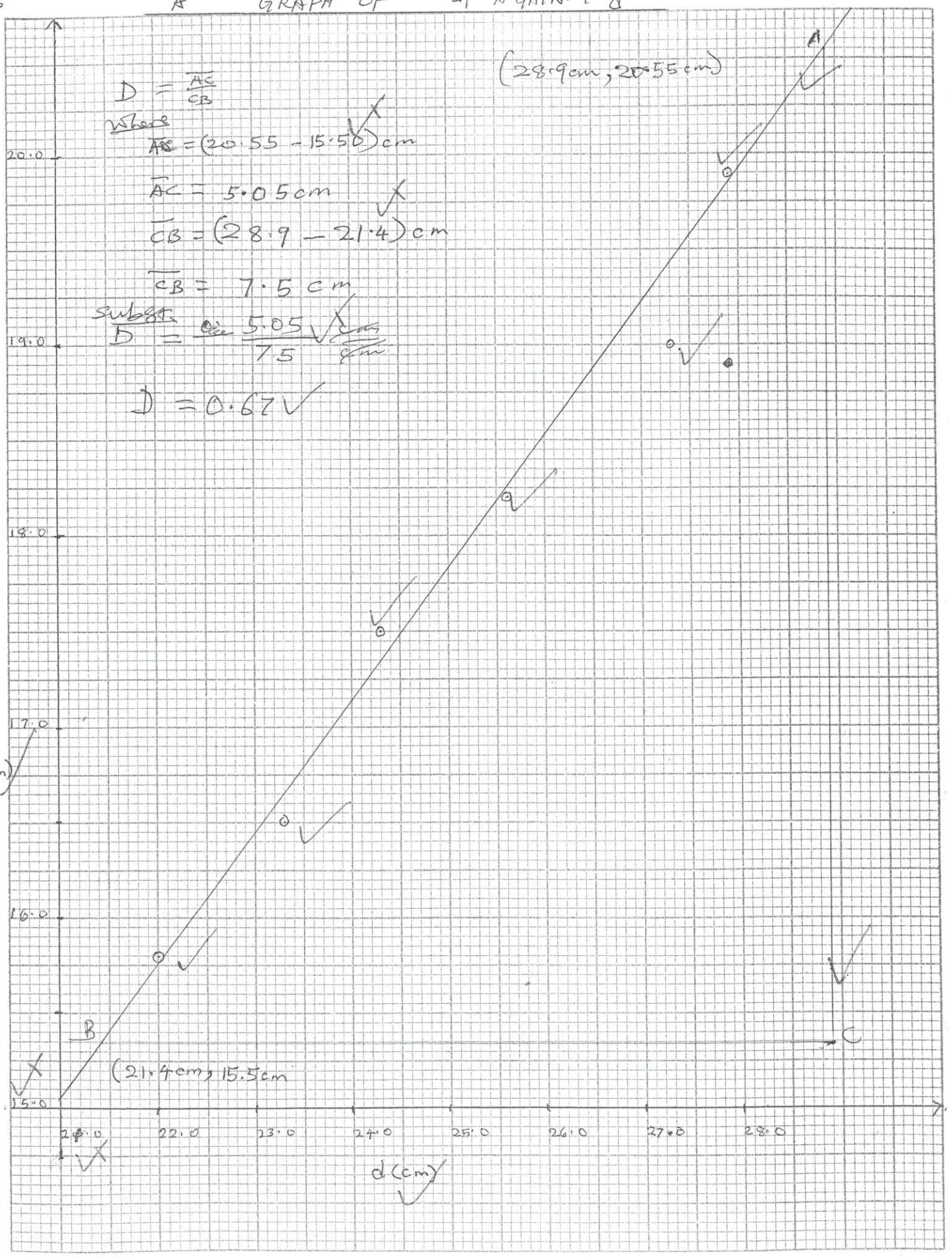
D = 0.67

***subst***

m = 100 x 0.67

m = 67g

05 A GRAPH OF $\sqrt{d_1}$ AGAINST d




$D = \frac{AC}{CB}$

Where

$AC = (20.55 - 15.50)\,cm$

$AC = 5.05\,cm$

$CB = (28.9 - 21.4)\,cm$

$CB = 7.5\,cm$

Subst.

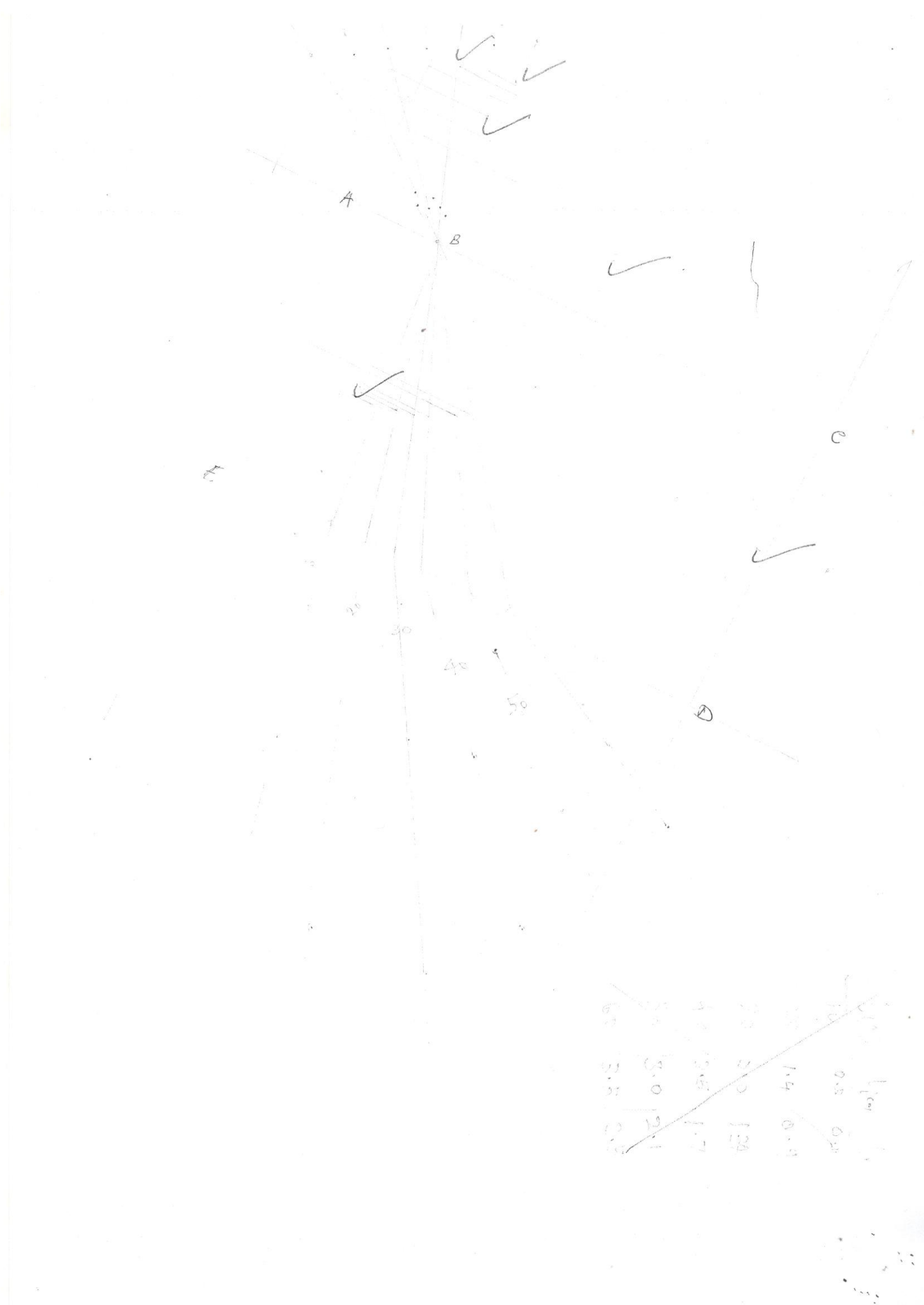
$D = \frac{5.05}{7.5}$ cm / cm

$D = 0.67$

0·5

0·5

0·1


A
B
C
D
E
30
40
50

- Soft board
- 4 drawing pins
- 4 optical pins
- 1 Geometry set
- White sheet of paper

2. Experiment to determine the refractive index of a block of glass using snell's law

$i = 10^0$

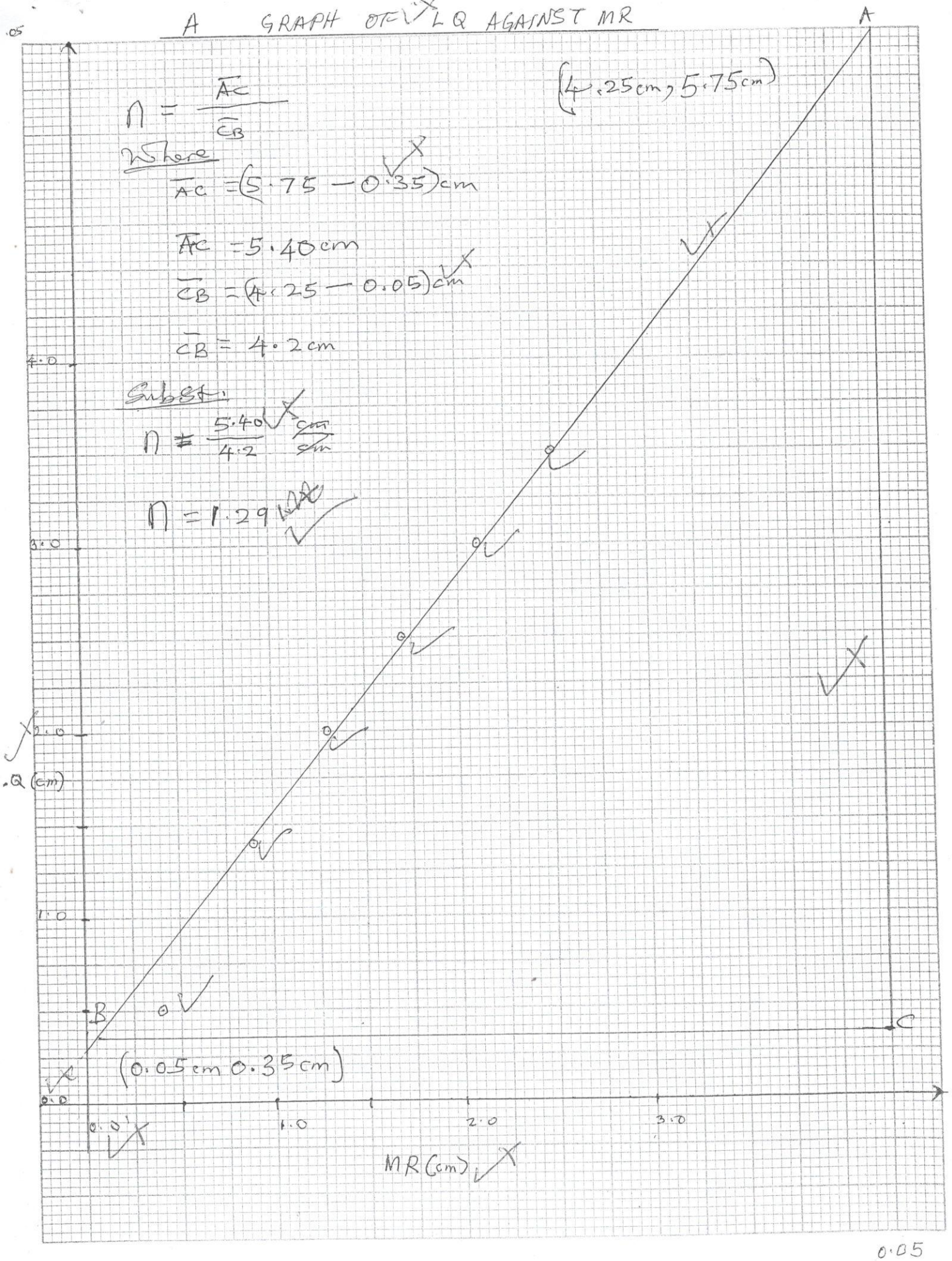
LQ =

MR =

**TABLE OF RESULTS**

| i ($^0$) | LQ (cm) | MR (cm) |
|---|---|---|
| 10 | 0.5 | 0.4 |
| 20 | 1.4 | 0.9 |
| 30 | 2.0 | 1.3 |
| 40 | 2.5 | 1.7 |
| 50 | 3.0 | 2.1 |
| 60 | 3.5 | 2.5 |

A GRAPH OF LQ AGAINST MR




$$n = \frac{\overline{AC}}{\overline{CB}}$$

Where

$\overline{AC} = (5.75 - 0.35)\,cm$

$\overline{AC} = 5.40\,cm$

$\overline{CB} = (4.25 - 0.05)\,cm$

$\overline{CB} = 4.2\,cm$

Subst:

$$n = \frac{5.40}{4.2}\ \frac{cm}{cm}$$

$n = 1.29$

0.05

3. Experiment to determine the relation between the potential difference causing current to flow through a uniform wire and the length of wire through which it flows.

$V_0 = 1.20$ V

$I_0 = 0.18$A

D = 80.0cm

**TABLE OF RESULT**

| d (cm) | V (v) |
|---|---|
| 100.0 | 1.20 |
| 80.0 | 0.95 |
| 60.0 | 0.70 |
| 40.0 | 0.50 |
| 20.0 | 0.25 |

**END**

# A GRAPH OF V AGAINST d

$p = \frac{\overline{AC}}{\overline{CB}}$

Where

$\overline{AC} = (2.28 - 0.32)\,V$

$\overline{AC} = 1.96\,V$

$\overline{CB} = (190 - 26)\,cm$

$\overline{CB} = 164\,cm$

Subst.

$p = \frac{1.96\,V}{164\,cm}$

$p = 0.012\,Vcm^{-1}$