**MWAKICAN FORM THREE COMMON EXAMINATION**

**PHYSICS PRACTICAL, 232/3**

**MARKING SCHEME**

**QUESTION ONE**

1. h= 6.0cm
2. Table

|  |  |  |  |
| --- | --- | --- | --- |
| X cm | h cm | X2 cm2 | X2/h cm |
| 20 | 6.0 | 400 | 66.67 |
| 25 | 8.0 | 625 | 78.13 |
| 30 | 11.0 | 900 | 81.82 |
| 35 | 14.0 | 1225 | 87.50 |
| 40 | 19.0 | 1600 | 84.21 |
| 45 | 23.0 | 2025 | 88.05 |

Use students own values award

-3 marks for correct values of h,

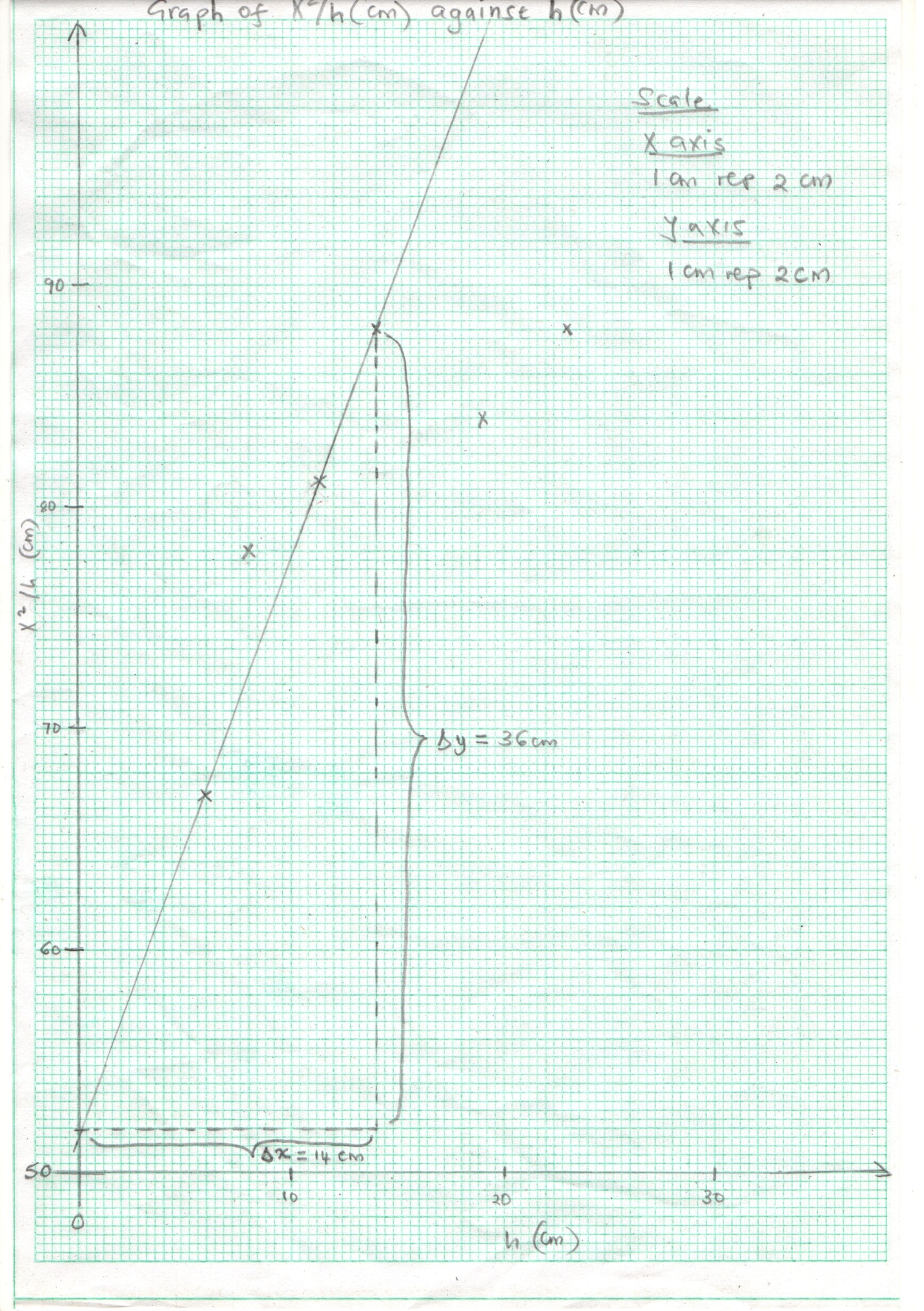
-One mark for x2

-and one mark for x2/h

Award ½ a mark for every entry made within range shown in the table.

d) Graph

* Axes-**٧**1mk (both axes labeled with units and quantity.
* Scale-٧1mk (simple and uniform)
* Plotting -٧2mks (1/2 mark for max of 4 values)
* Best line of fit-٧1mk



e) Should be computed from the graph

88-52 = 2.571 (with no units)

14-0

* ٧1mk for showing on the graph
* ٧1mk for substitution and accuracy

1. Read from students graph X ٧(1mk)

=52 cm (the y-intercept)

1. Time for 20 oscillations (1mk)

= 30.0 sec

1. Period (T) = time for 20 oscillations

20

= 30/20

= 1.5 sec ٧ (1mk)

(ii) P= T2g = 0.57m ٧ (4mk)

4π

(2mks for correct substitution and arithmetic)

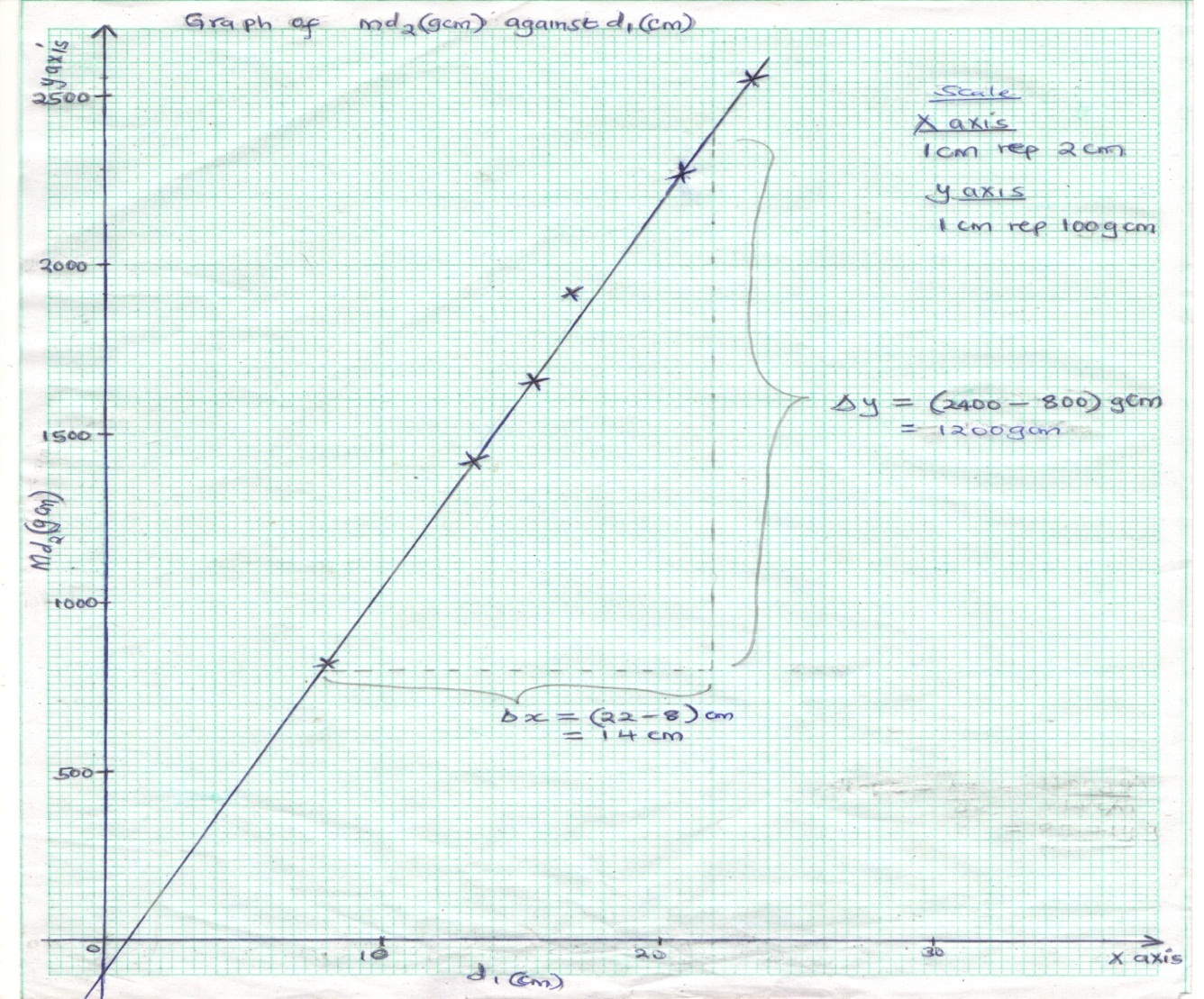
**QUESTION TWO**

1. G=50.0 cm ٧ (1mk)
2. Check students table and mark accordingly (5mks)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| m (g) | d1 (cm) | d2 (cm) | d1/d2 | md2(g/cm) |
| 20 | 8.0 | 41.0 | 0.1951 | 820 |
| 40 | 13.5 | 35.5 | 0.3803 | 1420 |
| 50 | 15.5 | 33.5 | 0.4627 | 1675 |
| 60 | 17.0 | 32.0 | 0.5313 | 1920 |
| 80 | 20.5 | 28.5 | 0.7193 | 2280 |
| 100 | 23.5 | 25.5 | 0.9257 | 2550 |

Each value of d1 and d2 (1/2 mark)max 2mks each

1. Straight line graph ٧(5mks)



* Correct labeling withj units 1mk
* Scale 1 mk
* Plotting all pointe correctly 2mks
* Line / curve 1mk

1. Slope to be derived from the graph ٧(2mks)

2400-800 = 85.714g

22-8

1. Slope represents **mass** of the metre rule ٧(1mk)

The units are in grammes (g)

1. Check the accuracy for values of thickness t and width b

(Values should be correct to 2d.p) each ٧(1mk)

t= 0.77 cm

b= 2.85cm

1. Check correct substitution for P ٧(2mks)

85.714 = 0.3906 g/cm3

100x0.77x2.85