

NAME: _____

FORM: _____

PHYSICS PRACTICAL

TITLE: Moments

AIM: To determine the weight of an unknown object

APPARATUS & MATERIALS:

| | |
|----------------|----------------|
| metre rule | unknown object |
| retort stand ` | pivot |
| 150 g masses | string |

DIAGRAM:

METHOD:

1. Place the ruler onto the pivot at its centre of gravity (50 cm mark) so that it balances.
2. Set up the experiment as shown in the diagram with the 150 g at the 10 cm mark and the unknown object on the metre rule on other side of the pivot.
3. Adjust the 150g masses until the system is in equilibrium (balanced).
4. Record the graduation mark of the unknown object and calculate distance (***d***) at which the unknown object is from the pivot.
5. Repeat the experiment by placing the 150g masses at the 20cm, 30 cm and the 40 cm mark.
6. Calculate the weight of the unknown object by using the principle of moments.

METHOD (Past Tense):

THEORY:

1. Define the moment of a force. State the formula and units.

2. State the principle of moments and formula

RESULTS:

The weight of the 150g masses is _____

Table Title: _____

| Graduation mark of 150g masses (<i>cm</i>) | Distance of 150g from pivot (<i>cm</i>) | Graduation mark of unknown object (<i>cm</i>) | Distance of unknown object from pivot (<i>cm</i>) |
|---|--|--|--|
| 10 | | | |
| 20 | | | |
| 30 | | | |
| 40 | | | |

CALCULATIONS:

Calculate weight of the unknown object in each case. (Show diagrams for each one)

150g masses at 10 cm mark

150g masses at 20 cm mark

150g masses at 30 cm mark

150g masses at 40 cm mark

The average weight of the unknown object is _____

CONCLUSION:

1. What is the weight of the unknown object?

2. State one precaution.

3. State one source of error.
