LAB REPORT # 04

Title :-

Kinetic friction force.

Experiment :-

Find the coefficient of kenetic friction ~~of~~ to find moving body on an inclined plain.

Objective :-

The objective of this experiment is to find the coefficient

Apparatus :-

- Wooden Box.
- Metallic sphere.
- Incline plane with degree scale.
- Magnetic Board.
- meter stick.
- Stop watch.

Procedure :-

1. First place the incline plane on magnetic board and note the distance of incline plane.
2. Then put the wooden box on incline plane and start moving it.
3. Then note the angle and time,

from the point where object started moving, note the time on stop watch and then note the time where the object stops moving.

After that calculates the acceleration for coefficient of Kinetic friction.

Take two readings of both wooden box and metallic sphere

Repeat the same steps for metallic and wooden box

Calculate the average of both two readings of wooden box and Metallic box.

Conclusion :-

The coefficient of Kinetic friction of wooden box is 0.8375

The coefficient of Metallic friction is 0.01385

Sr No	obj	S(m)	Time	θ	$\mu_k = \frac{g\sin\theta - a}{g\cos\theta}$
01	Wood	0.253 m	0.67s	41°	0.822
02	Wood	0.253m	1.09	42°	0.853

Sr No	obj	S(m)	Time	θ	Acce---	$\mu_k = \frac{g\sin\theta - a}{g\cos\theta}$
01	Metallic Sphere	0.253m	1.94s	1°	$0.134 ms^{-2}$	3.77×10^{-3}
02	metal	0.253m	1.78s	2°	$0.159 ms^{-2}$	0.01

Average wooden:-

$$= \frac{R_1 + R_2}{2}$$

$$= \frac{0.822 + 0.853}{2}$$

$$= 0.8375$$

Average metal:-

$$= \frac{R_1 + R_2}{2}$$

$$= \frac{3.77 \times 10^{-3} + 0.01}{2}$$

$$= -0.01385$$