Name _____ Date _____

AP Physics Lab Activity #5 (45 pts)

Period _____ Mrs. Nadworny

Partners: Due Date _____

Friction on a Turntable

NO Lab Write-Up Required
must be neatly written in pencil

Purpose

To find the coefficient of static friction between a penny and a record using two different methods – the *rotational method* and the *tilting method*.

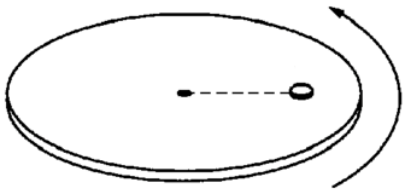
Materials (2)

Include other necessary equipment.

- penny
- record
- turntable
-
-
-

Diagram (2)

Include other necessary labels on the diagram.



Procedure (4)

Rotational Method

Place the penny on the record and the record on the turntable. Start the turntable in motion. Take any measurements needed to determine the coefficient of static friction between the penny and the record. Summarize the procedure you followed.

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Tilting Method

Place the penny on the record (not on the turntable). Tilt the record. Take any measurements needed to determine the coefficient of static friction between the penny and the record. Summarize the procedure you followed.

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Data Collection (12)

Include a rough sketch for each method, labeled appropriately. Neatly record all appropriate measurements, including label, units, and uncertainties.

Data Processing (18)

For each method, draw a free-body diagram for the penny, write the appropriate net force equations and solve them for the coefficient of static friction. Calculate a percent difference (p.d. = (difference/average)*100) between the two methods.

Conclusion (5)

Attach to this lab, a well-written paragraph that summarizes your results and compares both methods for finding the coefficient of static friction. Describe which method you believe was more accurate and why.

(2)
neatness