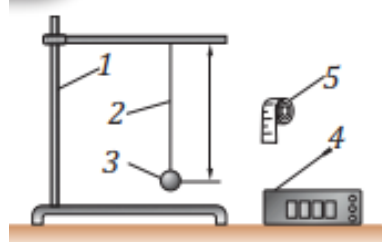
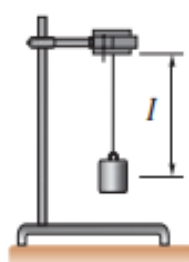


17-MAVZU

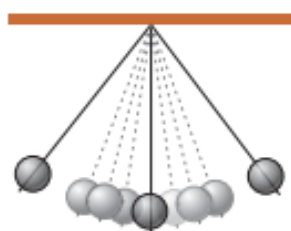
LABORATORIYA ISHI MATEMATIK MAYATNIK YORDAMIDA ERKIN TUSHISH TEZLANISHINI ANIQLASH



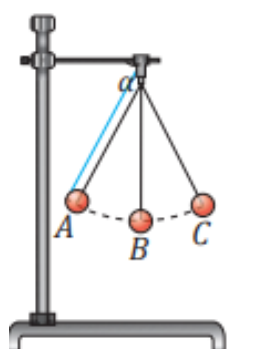
2.10-rasm



2.11-rasm



2.12-rasm



2.13-rasm

Ishning maqsadi: erkin tushish tezlanishini matematik mayatnik yordamida aniqlash usulini o'rganish.

Kerakli asbob-uskunalar: laboratoriya universal shtativi; cho'zilmas ip; sharcha; sekundomer; o'lchov lentasi (2.10-rasm).

Ishni bajarish tartibi

1. Shtativga ipni imkon boricha uzunroq holda mahkamlang.
2. Ipning uzunligini o'lchov lentasi yordamida o'lchang. Bunda shar radiusi mayatnik ipining uzunligidan juda kichik bo'lgani uchun uni hisobga olmasak ham bo'ladi (2.11-rasm).
3. Sharchani muvozanat vaziyatidan uncha katta bo'lmagan ($6^\circ-8^\circ$) burchakka og'dirib, qo'yib yuboring va shu onda sekundomerni ham ishga tushiring (2.12-rasm).
4. Matematik mayatnikning oldindan aniq belgilangan (masalan, 20 marta) tebranishlar sonining to'liq tebranishi uchun ketgan vaqtni yozib oling.
5. $T = t/N$ formuladan tebranish davrini toping.
6. $g = \frac{4\pi^2 r}{T^2}$ formulaga ko'ra erkin tushish tezlanishining son qiymatini toping.
7. Mayatnik ipining uzunligini o'zgartirmagan holda tebranishlar sonini $N_2=30$ va $N_3=40$ taga yetkazib tajribani takrorlang (2.13-rasm).
8. Olingan natijalar yordamida erkin tushish tezlanishi son qiymatlarini aniqlang.
9. Olingan natijalar asosida quyidagi jadvalni to'ldiring.
10. Absolyut va nisbiy xatoliklarni toping.

l_{ip} (m)	N , (marta)	t , (s)	g , (m/s ²)	$\bar{g}_{o'rt}$ (m/s ²)	Δg , (m/s ²)	$\Delta \bar{g}_{o'rt}$, (m/s ²)	$\varepsilon = \frac{\Delta \bar{g}}{\bar{g}_{o'rt}} 100\%$
	20						
	30						
	40						



1. Matematik mayatnikning tebranish davri mayatnik sharchasi-ning massasiga bog'liq bo'lmisligiga sabab nima?
2. Yerdan boshqa planetalarda shu tajriba o'tkazilsa, olingan natijalar farq qiladimi?
3. Matematik mayatnik tebranish davri uning o'lchamlariga bog'liqmi?
4. Yerning ekvatori va qutbida matematik mayatnikning tebranish davri bir xil bo'la oladimi?