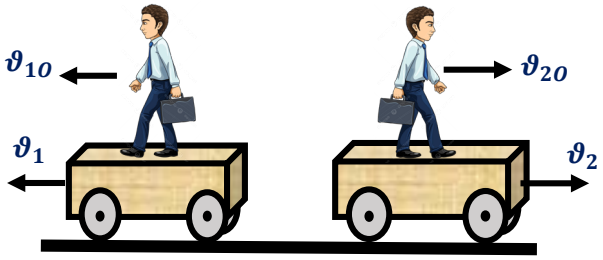
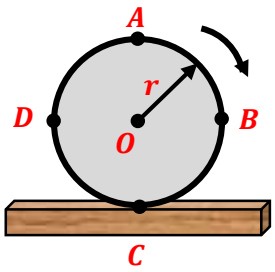
4-test. Mavzu: Harakatning nisbiyligi. Natijaviy tezlik

1. Yerga nisbatan ϑ_1 =4 m/s, $\vartheta_2 = 3\,m/s$ tezliklar bilan harakatlanayotgan platformalar ustida platformalarga nisbatan $\vartheta_{1o} = 3\,m/s$ va $\vartheta_{2o} = 4\,m/s$ tezliklar bilan ikki odam rasmda ko‘rsatilgandek harakatlanmoqda. Odamlarning nisbiy tezligi (m/s) qanday? (odamning harakati platformaning harakatiga ta’sir ko‘rsatmaydi)



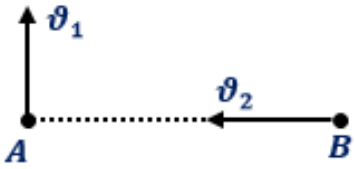
A) 0 B) 6 C) 14 D) 8

2. Sirpanish bilan dumalayotgan g‘ildirakning turli nuqtalari turli tezlikka ega: $\vartheta_A = 5\,m/s$, $\vartheta_O = 3$ m/s. G‘ildirakning C nuqtasining tezligi (m/s) topilsin.



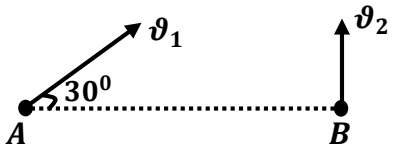
A) -3 B) 1 C) 0 D) -1

3. A va B moddiy nuqtalar rasmda tasvirlanganidek harakatlanmoqda, tezliklari $\vartheta_1 = 3\,m/s$, $\vartheta_2 = 4\,m/s$. Nuqtalarning nisbiy tezligi (m/s) aniqlansin.



A) 2,5 B) 7,5 C) 10 D) 5

4. A va B moddiy nuqtalar rasmda tasvirlanganidek harakatlanmoqda, tezliklari $\vartheta_1 = 9\,m/s$, $\vartheta_2 = 12\,m/s$. Nuqtalarning nisbiy tezligi (m/s) aniqlansin.



A) $\sqrt{333}$ B) $\sqrt{45}$ C) $\sqrt{117}$ D) $\sqrt{52}$

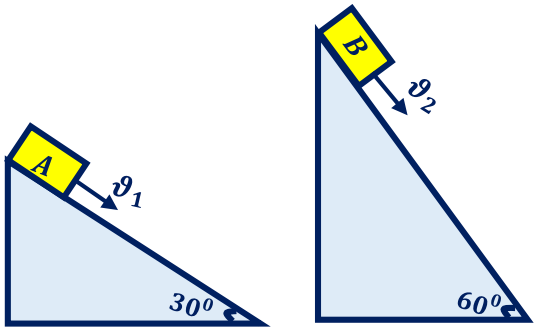
5. Bir-biriga tomon harakatlanayotgan ikki mashinaning tezliklari 15 m/s va 36 km/h. Ularning nisbiy tezliklarini (m/s) toping.

A) 25 B) 41 C) 21 D) 15

6. Dastlab ikkita mashina orasidagi masofa 1 km edi. Ular bir-biri tomon harakatlana boshlab, 16 s da uchrashishdi. Agar 1-mashinaning tezligi 20 m/s bo‘lsa, 2-mashinaning tezligini (m/s) toping.

A) 22,5 B) 42,5 C) 56,5 D) 18,5

7. A va B jismlar qiya tekisliklardan $\vartheta_1 = \sqrt{3}\,m/s$, $\vartheta_2 = 2$ m/s o‘zgarmas tezliklar bilan sirpanib tushishmoqda. Ularning Nisbiy tezliginini (m/s) aniqlang.



A) $\sqrt{13}$ B) $\sqrt{7}$ C) 2 D) 1

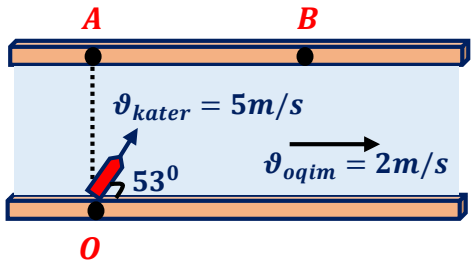
8. Suzuvchi oqimga qarshi suzmoqda. Oqim tezligi 2 m/s. Suzuvchining suvga nisbatan tezligi 5 m/s bo‘lsa, uning qirg‘oqqa nisbatan tezligini (m/s) toping.

A) 1,5 B) 3,5 C) 7 D) 3

9. Dengizda kema 6 km/h soat tezlik bilan tekis suzib ketmoqda. Kema ustidagi odam oqim yo‘nalishiga tik ravishda 8 km/h tezlik bilan harakatlanmoqda. Odamning qirg‘oqqa nisbatan tezligini (km/h) aniqlang.

A) 2 B) 14 C) 10 D) 3

10. Katerning suvga nisbatan tezligining yo‘nalishi oqim yo‘nalishi bilan 53^0 burchakni tashkil etadi. Agar daryoning kengligi 60 m bo‘lib, kater B nuqtaga yetib borgan bo‘lsa, AB kesmaning uzunligini toping. ($sin53^0 = 0{,}8; cos53^0 = 0{,}6$)



A) 30 m B) 45 m C) 75 m D) 60m

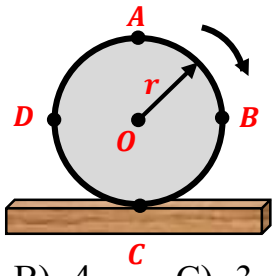
11. Metrodagi eskalator odamni yuqoriga 30 s da olib chiqadi. Odam va eskalator birgalikda harakat qilsa, odam 20 s da ko‘tariladi. Eskalator tinch tursa, odam necha sekundda yuqoriga ko‘tariladi?

A) 72 B) 30 C) 54 D) 60

12. Kater daryoda Manzilga boorish uchun 2 soat, qaytib kelish uchun esa 4 soat vaqt sarfladi. Agar sol jo‘natilsa, Manzilga necha soatda yetib boradi?

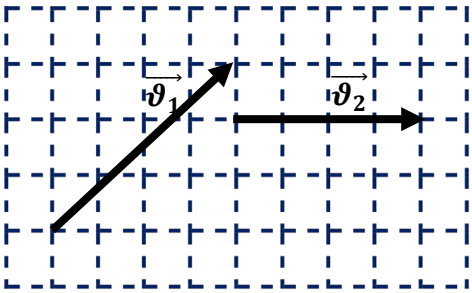
A) 3 B) 7 C) 9 D) 8

13. Sirpanish bilan dumalayotgan g‘ildirakning turli nuqtalari turli tezlikka ega: $\vartheta_A = 5\ m/s$, $\vartheta_O = 3$ m/s. G‘ildirakning C nuqtasining tezligi (m/s) topilsin.



A) 4 B) -4 C) -3 D) 3

14. Rasmda ikki jismning tezlik vektorlari ko‘rsatilgan. Bu ikki jismning nisbiy tezligini (m/s) aniqlang. Har bir katakning chiziqli o‘lchami modul jihatdan 1 m/s ga teng.

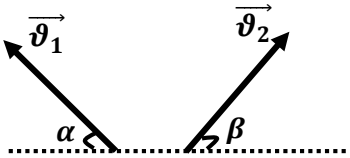


A) 3 B) 6 C) 8 D) 4

15. 36 km/h tezlikda harakatlanayotgan traktorni undan 100 m orqada 20 m/s tezlik bilan kealyotgan avtomobil qancha vaqtda (s) quvib o‘tadi?

A) 5 B)10 C) 20 D) 25

`16. Tezliklari $\vartheta_1 = 15\ m/s$; $\vartheta_2 = 20\ m/s$ bo‘lgan jismlar berilgan chizma orqali harakat qilmoqda. Ularning nisbiy tezligini (m/s) toping. $\alpha = 30^0$, $\beta = 60^0$.



A) 5 B) 35 C) 25 D) 10

17. Avtomobil o‘zgarmas 36 km/h tezlik bilan harakatlanmoqda. Avtomobil g‘ildiragining eng yuqori va pastki nuqtalarining yerga nisbatan tezliklarini (m/s) aniqlang.

A) 72; 0 B) 72; 36 C) 0; 10 D) 20; 0

18. Agar daryo suvining oqish tezligi 4 m/s bo‘lib, qayiqning suvga nisbatan tezligi 4 m/s va oqimga perpendikular yo‘nalgan bo‘lsa, qayiqning qirg‘oqqa nisbatan tezligi oqim yo‘nalishi bilan qanday burchak tashkil etadi?

A) 0^0 B) 30^0 C) 45^0 D) 60^0

19. Vertalyot yuqoriga tekis ko‘tarilmoqda. Vertalyot parragining chetki nuqtasi yer bilan bog‘langan sanoq tizimiga nisbatan qanday traektoriya chizadi?

A) vintsimon B) aylana

C) parabola D) ellips

20. Stol ustidagi aylana uzunligi 50 cm bo‘lgan silindrga ingichka ip o‘ralgan bo‘lib, ipning uchiga stol chetidagi blok orqali yuk osilgan. Silindr sirpanishsiz bitta to‘liq aylanganda, yuk necha cm tushadi?

A) 25 B) 100 C) 75 D) 125

Test muallifi: Doniyor Ergashev

Test kalitlari									
1	2	3	4	5	6	7	8	9	10
C	B	D	C	A	B	D	B	C	C
11	12	13	14	15	16	17	18	19	20
D	D	A	A	B	C	D	C	A	B