51-Mavzu. Vektorlar

1. Uchlari A(0;0) B(4;3) va C(1;7) nuqtalarda bo‘lgan uchburchakning A burchagini toping .

A) $\frac{\pi}{4}$ B) arccos0,9 C) arccos0,96 D) $\frac{\pi}{3}$

2. $y=-3x+7$ chiziqli funksiyaga $x=1$ to‘g‘ri chiziqqa nisbatan simmetrik funksiyani toping.

A) $y=-3x-1$ B) $y=-3x+9$ C) $y=3x-9$ D) $y=3x+1$

3. $y=3x^2-6x+7$ kvadrat funksiyaga (0;0) nuqtaga nisbatan simmetrik funksiyani toping.

A) $y=3x^2+6x+7$ B) $y=-3x^2+6x-7$

C) $y=3x^2-6x+7$ D) $y=-3x^2-6x-7$

4. $2x-5y+7=0$ tenglama bilan berilgan to‘g‘ri chiziqqa $K(-2;1)$ nuqtaga nisbatan simmetrik bo‘lgan to‘g‘ri chiziq tenglamasini toping.

A) $2x-5y-7=0$ B) $2x-5y+11=0$

C) $2x+5y-5=0$ D) $2x+5y+1=0$

5. $(x-4)^2+(y+3)^2=11$ tenglama bilan berilgan aylanaga $M(-4;2)$ nuqtaga nisbatan simmetrik bo‘lgan aylana tenglamasini toping.

A) $(x+4)^2+y^2=11$ B) $(x+12)^2+(y-7)^2=11$

C) $x^2+(y+1)^2=11$ D) $(x+4)^2+(y-2)^2=11$

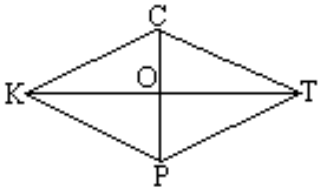
6. $A(-3;0)$ va $B(-5;4)$ nuqtalar berilgan. $\overrightarrow{BA}$ vektorning koordinatalarini toping.

A) (–8;–4) B) (–8;4) C) (2;–4) D) (–2;4)

7. $A(1;-1)$ nuqta $\vec{a}\,(5;4)$ vektorning boshi bo‘lsa, uning oxirini koordinatalarini toping.

A) (5;5) B) (4;4) C) (5;1) D) (6;3)

8. $PKCT$ -romb bo‘lsa, $\overrightarrow{OP}$ ga teng bo‘lgan vektorni ko‘rsating.



A) $\overrightarrow{OK}$ B) $\overrightarrow{CO}$ C) $\overrightarrow{TO}$ D) $\overrightarrow{KO}$

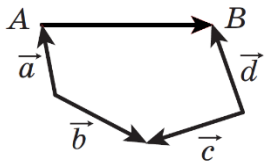
9. Vektorlar yig‘indisini toping: $\overrightarrow{BH}+\overrightarrow{HK}+\overrightarrow{TP}+\overrightarrow{MT}+\overrightarrow{KM}+\overrightarrow{PQ}$

A) $\overrightarrow{BM}$ B) $\overrightarrow{BK}$ C) $\overrightarrow{MQ}$ D) $\overrightarrow{BQ}$

10. $\overrightarrow{FK}$ vektorni $\overrightarrow{EF}$ va $\overrightarrow{EK}$ vektorlar orqali ifodalang.

A) $\overrightarrow{FK}=\overrightarrow{EF}-\overrightarrow{EK}$ B) $\overrightarrow{FK}=\overrightarrow{EF}+\overrightarrow{EK}$ C) $\overrightarrow{FK}=\overrightarrow{EK}-\overrightarrow{EF}$ D) $\overrightarrow{FK}=\frac{1}{2}\left(\overrightarrow{EF}+\overrightarrow{EK}\right)$

11. Rasmda tasvirlangan $\overrightarrow{AB}$ vektorni $\vec{a}$, $\vec{b}$, $\vec{c}$ va $\vec{d}$ vektorlar orqali ifodalang.



A) $\overrightarrow{AB}=\vec{a}+\vec{b}+\vec{c}+\vec{d}$ B) $\overrightarrow{AB}=\vec{a}+\vec{b}-\vec{c}+\vec{d}$

C) $\overrightarrow{AB}=-\vec{a}-\vec{b}+\vec{c}+\vec{d}$ D) $\overrightarrow{AB}=-\vec{a}+\vec{b}-\vec{c}+\vec{d}$

12. $\vec{a}\ (1;2)$, $\vec{b}\ (2;1)$ va $\vec{c}\ (3;2)$ vektorlar berilgan. k ning qanday qiymatida $\vec{a}+k\,\vec{b}$ vektor $\vec{c}$ vektorga kollinear bo‘ladi?

A) 4 B) 2 C) -2 D) -4

13. Agar $\vec{a}\ (x;2)$ va $\vec{b}\ (5;y)$ o‘zaro kollinear vektorlar bo‘lsa, $4xy-3$ ning qiymatini toping.

A) 37 B) 33 C) 27 D) 23

14. $\vec{a}\ (-1;2)$, $\vec{b}\ (-2;1)$ va $\vec{c}\ (-3;2)$ vektorlar berilgan. k ning qanday qiymatida

$2\,\vec{a}-k\,\vec{b}$ vektor $\vec{c}$ vektorga perpendikulyat bo‘ladi?

A) $\frac{7}{4}$ B) $\frac{4}{7}$ C) $-\frac{7}{4}$ D) $-\frac{4}{7}$

15. $\vec{a}\ (12;-5)$ vektor bilan OX o‘qi orasidagi burchak kosinusini toping.

A) $\frac{12}{5}$ B) $\frac{12}{13}$ C) $-\frac{12}{5}$ D) $-\frac{5}{13}$

16. ABCD parallelogramning diagonallari O nuqtada kesishadi. $\overrightarrow{AC}=k\,\overrightarrow{AO}$ tenglik bajariladigan k sonining qiymatinini toping.

A) 1,5 B) 2 C) 2,5 D) 3

17. $\vec{a}\,(-1;2)$, $\vec{b}\,(-2;1)$ vektorlar berilgan. Agar $2\,\vec{a} - x\,\vec{b} = y\,\vec{a} + 3\,\vec{b}$ o‘rinli bo‘lsa, x va y ning qiymatini toping.
A) $x = 3, y = -2$ B) $x = -3, y = 2$ C) $x = 3, y = 2$ D) $x = -3, y = -2$

18. $\vec{a}\,(3;2)$, $\vec{b}\,(1;2)$ va $\vec{c}\,(x+1; y-1)$ vektorlar berilgan. Agar $2\,\vec{a} - 3\,\vec{b} = \vec{c}$ bo‘lsa, xy ning qiymatini toping.
A) -2 B) -3 C) -4 D) -6

19. Agar $\vec{a} = -2\,\vec{i} + \vec{j}$ va $\vec{b} = 2\,\vec{i}$ bo‘lsa, $\vec{c} = -3\,\vec{a} + 2\,\vec{b}$ vektorning koordinatalarini ko‘rsating.
A) (1;–1) B) (–2;3) C) (–6;4) D) (10;–3)

20. Agar $\vec{a}$, $\vec{b}$ vektorlar uchun $2\,\vec{a} + \vec{b} = 6\,\vec{i} + 9\,\vec{j}$ va $\vec{a} + 2\,\vec{b} = -3\,\vec{i} + 6\,\vec{j}$ o‘rinli bo‘lsa, $\vec{a}$ vektorni toping.
A) $\vec{a}\,(5;4)$ B) $\vec{a}\,(-5;-4)$ C) $\vec{a}\,(-5;4)$ D) $\vec{a}\,(5;-4)$

21. $\vec{a}(2;3)$, $\vec{b}(3;-2)$ va $\vec{c}(4;19)$ vektorlar uchun $\vec{c} = m\vec{a} + n\vec{b}$ tenglik o’rinli bo’lsa, $m \cdot n$ ko’paytmaning qiymatini toping.
A) -10 B) -12 C) 6 D) -8

22. Ixtiyoriy uchtasi bitta to‘g‘ri chiziqda yotmaydigan A, B, C va D nuqtalar berilgan. Agar $\overrightarrow{AB} = 0{,}8\,\overrightarrow{DC}$ bo‘lsa, ABCD to‘rtburchak turini aniqlang.
A) to‘g‘ri to‘rtburchak B) kvadrat C) parallelogramm D) trapetsiya

23. (1,5;2) va (4;–3) vektorlarning skalyar ko‘paytmasini toping.
A) –1 B) 3 C) 0 D) –2

24. $\vec{a}\,(3;2)$ va $\vec{b}\,(0;-1)$ vektorlar berilgan. $-2\,\vec{a} + 4\,\vec{b}$ vektorning uzunligini toping.
A) 10 B) 6 C) 8 D) 3

25. Agar $\left|\vec{a} - \vec{b}\right| = 8$ va $\vec{a} \cdot \vec{b} = 9$ bo‘lsa, $\left|\vec{a} + \vec{b}\right|$ ni toping.
A) 9 B) 10 C) $\sqrt{108}$ D) 11

26. $\vec{a}$ va $\vec{b}$ nokollinear birlik vektorlarga qurilgan parallelogrammning diagonallari orasidagi burchakni toping.
A) $90°$ B) $60°$ C) $45°$ D) $30°$

27. $\left(2\vec{a}+\vec{b}\right)$ va $\left(2\vec{a}-\vec{b}\right)$ perpendikulyar vektorlar berilgan. Agar $\left|\vec{a}\right|=5$ bo‘lsa, $\left|\vec{b}\right|$ ni toping.

A) 8 B) 9 C) 10 D) 11

28. $\vec{a}\left(m;\sqrt{21}\right)$ vektorning uzunligi 5 ga teng bo‘ladigan m ning qiymatlarini toping.

A) 0 B) 2 C) 3;–3 D) 2;–2

29. Agar $\left|\vec{a}\right|=\left|\vec{b}\right|$ bo‘lsa, $\left(\vec{a}+\vec{b}\right)$ va $\left(\vec{a}-\vec{b}\right)$ vektorlar orasidagi burchakni aniqlang. ($\vec{a}$ va $\vec{b}$ nokollinear)

A) 60° B) 30° C) 90° D) aniqlab bo‘lmaydi

30. Agar $\left|\vec{a}\right|=3$; $\left|\vec{b}\right|=4$ va $\vec{a}\cdot\vec{b}=4$ bo‘lsa, $\left|2\vec{a}-\vec{b}\right|$ ning qiymatini toping.

A) 6 B) 8 C) 9 D) 12

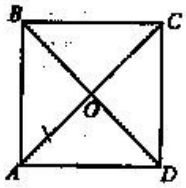
31. $\left|\vec{a}\right|=3$; $\left|\vec{b}\right|=4$ bo‘lsa, $\left|2\vec{a}-\vec{b}\right|$ ning qiymatini quyidagilardan qaysi biri bo‘lishi mumkin?

A) 0 B) 1 C) 6 D) 11

32. Agar $\vec{m}$ va $\vec{n}$ o‘zaro perpendikulyar birlik vektorlar bo‘lsa, $\vec{a}=2\vec{m}+\vec{n}$ vektorning uzunligini toping.

A) 2 B) 3 C) $\sqrt{5}$ D) $\sqrt{3}$

33. ABCD kvadrat diagonallari O nuqtada kesishadi Orasidagi burchak 135° bo‘lgan vektorlar qaysi javobda berilgan?



A) $\overrightarrow{OD}$ va $\overrightarrow{AD}$ B) $\overrightarrow{BO}$ va $\overrightarrow{DC}$ C) $\overrightarrow{OB}$ va $\overrightarrow{DC}$ D) $\overrightarrow{AC}$ va $\overrightarrow{DO}$

34. $|\vec{a}|=3$ va $|\vec{b}|=4$ hamda $\vec{a}$ va $\vec{b}$ vektorlar $\frac{\pi}{3}$ ga teng burchak tashkil qiladi. $\vec{c}=3\vec{a}+2\vec{b}$ vektorning uzunligini toping.

A) $\sqrt{217}$ B) 12 C) 17 D) $\sqrt{221}$

35. ABCD to‘rtburchak uchlarining koordinatalari $A(-12;6), B(0;11), C(5;-1)$ va $D(-7;-6)$ berilgan. Shu to‘rtburchakka tashqi chizilgan aylana markazining koordinatalarini toping.

A) $(3{,}5;-2{,}5)$ B) $(-3{,}5;-2{,}5)$ C) $(-3{,}5;2{,}5)$ D) $(-4{,}5;3{,}5)$

36. $\bar{a}$ (2;1;–1) vektorga kollinear $\bar{b}$ vektor uchun $\bar{a}\cdot\bar{b}$=3 tenglik o‘rinli bo‘ladi. Shu $\bar{b}$ vektor uzunligini toping.

A) $\sqrt{2}$ B) $\sqrt{3}$ C) $\sqrt{2{,}5}$ D) $\sqrt{1{,}5}$

37. $\vec{a}$ $(1;4;2\sqrt{2})$ vektorga qarama-qarshi yo‘nalgan birlik vektorning koordinatalarini toping.

A) $\vec{b}$ $(-\frac{1}{5};\frac{4}{5};\frac{2\sqrt{2}}{5})$ B) $\vec{b}$ $(\frac{1}{5};-\frac{4}{5};\frac{2\sqrt{2}}{5})$

C) $\vec{b}$ $(-\frac{1}{5};\frac{4}{5};-\frac{2\sqrt{2}}{5})$ D) $\vec{b}$ $(-\frac{1}{5};-\frac{4}{5};-\frac{2\sqrt{2}}{5})$

38. $\vec{AB}(-3;0;2)$ va $\vec{AC}(7;-2;2)$ vektorlar ABC uchburchakning tomonlaridir. Shu uchburchakning AN medianasi uzunligini toping.

A) 3 B) 1,5 C) $3\sqrt{6}$ D) $3\sqrt{2}$

39. $\overrightarrow{AB}$ $(-3;1;4)$, $\overrightarrow{BC}$ $(-2;3;-7)$ va $\overrightarrow{CD}$ $(5;-1;4)$ lar ABCD to‘rtburchakning tomonlari bo‘lsa, shu to‘rtburchakning diagonallaridan iborat vektorlar skalyar ko‘paytmasining modulini toping.

A) 9 B) 5 C) 2 D) 12

40. $ABCDA_1B_1C_1D_1$ to‘g‘ri burchakli parallelepiped va $\overrightarrow{AA_1}=\vec{a}, \overrightarrow{AB}=\vec{b}$ va $\overrightarrow{AD}=\vec{c}$ berilgan. $\overrightarrow{AC_1}$ ni $\vec{a},\vec{b}$ va $\vec{c}$ vektorlar orqali ifodalang.

A) $\vec{a}+\vec{b}+\vec{c}$ B) $\vec{a}+\vec{b}-\vec{c}$ C) $\vec{a}-\vec{b}+\vec{c}$ D) $\vec{b}+\vec{c}-\vec{a}$

41. $ABCDA_1B_1C_1D_1$ to‘g‘ri burchakli parallelepiped va $\overrightarrow{AA_1}=\vec{a}, \overrightarrow{AB}=\vec{b}$ va $\overrightarrow{AD}=\vec{c}$ berilgan. $\overrightarrow{DB_1}$ ni $\vec{a},\vec{b}$ va $\vec{c}$ vektorlar orqali ifodalang.

A) $\vec{a}+\vec{b}+\vec{c}$ B) $\vec{a}-\vec{b}+\vec{c}$ C) $\vec{a}-\vec{b}-\vec{c}$ D) $\vec{b}+\vec{c}-\vec{a}$

Kalitlar

1.	A	16.	B	31.	C
2.	D	17.	B	32.	C
3.	D	18.	A	33.	B
4.	B	19.	D	34.	A
5.	B	20.	A	35.	C
6.	C	21.	A	36.	D
7.	D	22.	D	37.	D
8.	B	23.	C	38.	A
9.	D	24.	A	39.	C
10.	C	25.	B	40.	A
11.	D	26.	A	41.	C
12.	A	27.	C		
13.	A	28.	D		
14.	A	29.	C		
15.	B	30.	A		