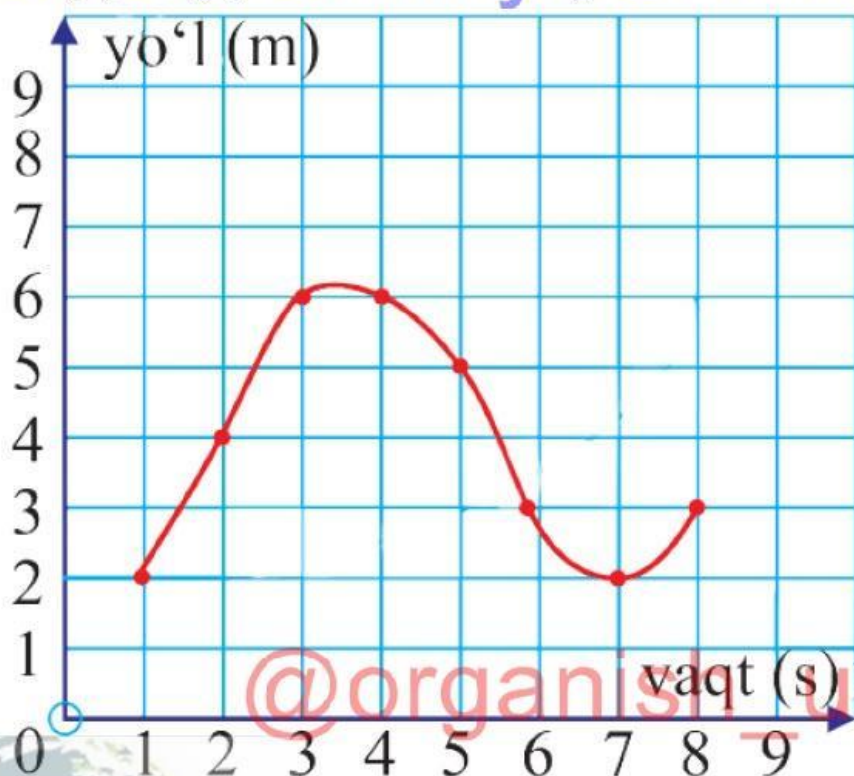


1. (B-2 ball) Moddiy nuqtaning to'g'ri chiziqli bo'yicha harakat qonuni $s(t)$ ning grafigi rasmda berilgan. $s(3) - s(1)$ orttirmani hisoblang.



- A) 4
B) 5
C) 2
D) 0
2. (B-2 ball) Limitni hisoblang: $\lim_{x \rightarrow 0} \frac{x-1}{x+1}$
- A) -1
B) 1
C) 2
D) 0
3. (B-2 ball) Hosilani hisoblash qoidalaridan foydalanib har bir funksiyaning hosilasini toping va mos keltiring.

Funksiyalar	Hosilalar
I. $y = x^2$	A. $y = -\cos x$
	B. $y = \cos x$
II. $y = \sin x$	C. $y = 2x$
	D. $y = \frac{x^3}{3}$

- A) I-C, II-B
B) I-C, II-A
C) I-D, II-A
D) I-D, II-B

4. (B-2 ball) $f(x) = x^2 - 4x$ funksiyaning statsionar nuqtalarini toping.

- A) $x = 2$
- B) $x_1 = 0$ va $x_2 = 4$
- C) $x = -2$
- D) $x_1 = 0$ va $x_2 = -4$

5. (Q-2,6 ball) O'quv ishlab chiqarish majmuasida 11-sinf o'quvchilari matn terish bo'yicha sinovdan o'tkazildi.

- Karim 3 daqiqada 213 ta so'zni terdi va 6 ta imloviy xato qildi;
- Nargiza 4 daqiqada 260 ta so'zni terdi va 7 ta imloviy xato qildi.

Ularning natijalariga qarab chiqarilgan quyidagi xulosalarning qaysi biri to'g'ri?

- A) Karim matnни Nargizaga qaraganda tezroq tergan, ammo Nargiza uni sifatliroq bajargan.
- B) Karim matnни Nargizaga qaraganda sekinroq tergan, ammo Nargiza uni sifatliroq bajargan.
- C) Karim matnни Nargizaga qaraganda tezroq tergan va sifatliroq bajargan.
- D) Karim matnни Nargizaga qaraganda sekinroq tergan, ammo Karim uni sifatliroq bajargan.

6. (Q-2,6 ball) $y = x^4 + 4x$ funksiya hosilasini toping.

- A) $4x^3 + 4$
- B) $x^4 + 4$
- C) $4x^3 + 4x$
- D) $4x^3 - 2x^2$

7. (Q-2,6 ball) $y = \operatorname{tg}^5 x$ funksiya hosilasini toping.

- A) $\frac{5 \operatorname{tg}^4 x}{\cos^2 x}$
- B) $-\frac{5 \operatorname{tg}^4 x}{\cos^2 x}$
- C) $\frac{5 \operatorname{tg}^4 x}{\sin^2 x}$
- D) $-\frac{5 \operatorname{tg}^4 x}{\sin^2 x}$

8. (Q-2,6 ball) $y = x^4 + \sqrt{x}$ funksiya hosilasining $x = 4$ dagi qiymatini aniqlang.

- A) $256\frac{1}{4}$
- B) $255\frac{3}{4}$
- C) $64\frac{1}{4}$
- D) $63\frac{3}{4}$

9. (Q-2,6 ball) Moddiy nuqta $s(t) = 8t^2 - 5t + 6$ qonuniyat bilan harakatlanmoqda. Agar t – sekund, s – metrlarda o'lchanadigan bo'lsa, nuqtaning $t_0 = 8$ sekunddagi oniy tezligini toping.

- A) 123 m/s

B) 558 m/s

C) 133 m/s

D) 246 m/s

10. (Q-2,6 ball) $f(x) = 3x^2 - 5x + 1$ funksiya grafigiga abssissasi $x_0 = 1$ bo'lgan nuqtada o'tkazilgan normal tenglamasini toping.

A) $y = -x$

B) $y = x$

C) $y = x - 2$

D) $y = -x + 2$

11. (Q-2,6 ball) $f(x) = x^2 + 6x - 4$ va $g(x) = 4x^2 + 8$ funksiyalar berilgan. Ularning grafigiga abssissasi $x = a$ bo'lgan nuqtada o'tkazilgan urinmalar parallel bo'lsa, a ning qiymatini toping.

A) $a = 1$

B) $a = -1$

C) $a = \frac{6}{10}$

D) $a = -\frac{6}{10}$

12. (Q-2,6 ball) $f(x) = x^2 - 6x$ funksiyaning o'sish oralig'ini toping.

A) $(3; \infty)$

B) $(-\infty; 3)$

C) $(6; \infty)$

D) $(-\infty; 0)$

13. (Q-2,6 ball) $f(x) = x^2 - 6x$ funksiyaning $[-2; 4]$ oraliqdagi eng kichik qiymatini toping.

A) -9

B) -8

C) 0

D) -16

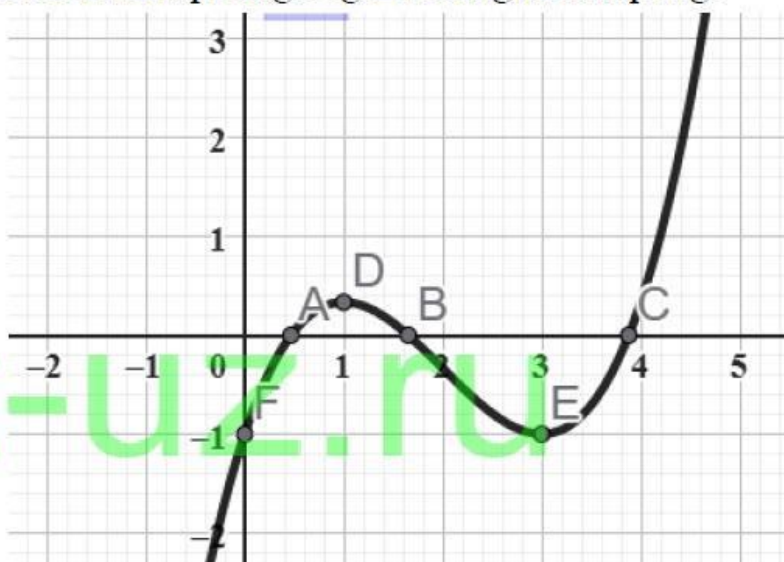
14. (Q-2,6 ball) Rasmda $f(x)$ funksiya hosilasining grafigi tasvirlangan. Grafikdan foydalanib, $f(x)$ funksiya nechta statsionar nuqtalarga ega ekanligini aniqlang.

A) 3

B) 2

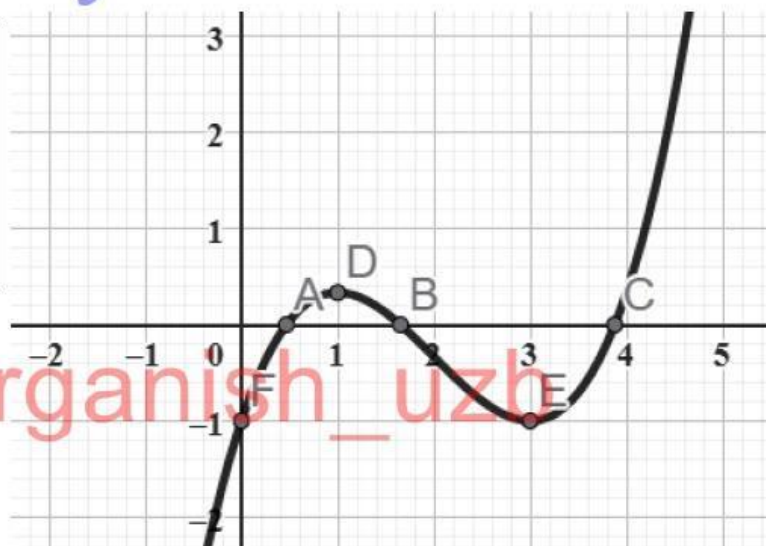
C) 1

D) 6



15. (M-3 ball) Rasmda $f(x)$ funksiya grafigining bir qismi tasvirlangan. Grafikdan foydalanib, quyidagi tasdiqlarning to'g'ri yoki noto'g'ri ekanligini aniqlang.

No	Tasdiqlar	to'g'ri	noto'g'ri
1	$f'(4) = 0$		
2	$f'(2) > 0$		
3	$f'(-1) < 0$		



- A) noto'g'ri, noto'g'ri, noto'g'ri;
 B) to'g'ri, to'g'ri, noto'g'ri;
 C) noto'g'ri, to'g'ri, to'g'ri;
 D) to'g'ri, to'g'ri, to'g'ri;

16. (M-3 ball) Rasmda $f(x)$ funksiya grafigining bir qismi tasvirlangan.

Grafikdan foydalanib, $x = 0$, $x = 1$, $x = 2$ va $x = 3$ qiymatlardan qaysi biri $f(x) \cdot f'(x) > 0$ tengsizlikni qanoatlantirishini aniqlang.

- A) 2
 B) 1
 C) 3
 D) 0

