

FUNKSIONAL TENGLAMALAR TEST (20 ta)

1.

$$f(x + y) = f(x) + f(y), \quad f(1) = 4$$

$f(3)$ ni toping.

- A) 7
- B) 10
- C) 12
- D) 16

2.

$$f(x + y) = f(x) * f(y), \quad f(0) \neq 0$$

$f(0)$ nimaga teng?

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

3.

$$f(x + y) = f(x) + f(y) + xy, \quad f(0) = 0$$

$f(x)$ ni toping.

- A) x
- B) x^2
- C) $\frac{x^2}{2}$
- D) $2x^2$

4.

$$f(x + 1) = f(x) + 3$$

Bu funksiya qanday xossaga ega?

- A) Sur'yektiv
- B) Injektiv
- C) Chegaralangan
- D) Davriy

5.

$$f(x) = 5x - 2 \quad (R \rightarrow R)$$

Bu funksiya qaysi xossalarga ega?

- A) Faqat injektiv
- B) Faqat sur'yektiv
- C) Bijektiv
- D) Hech qaysi

6.

$$f(f(x)) = x, \quad f \text{ qat'iy o'suvchi}$$

$f(x)$ nimaga teng?

- A) $-x$
- B) x
- C) x^2
- D) $|x|$

7.

$$f(x) - f(y) = x - y$$

$f(x)$ ni toping.

- A) x
- B) $x + C$
- C) x^2
- D) $|x|$

8.

$$f(x + y) = f(x) + f(y), \quad f \text{ uzluksiz}$$

Quyidagilardan qaysi yechim to'g'ri?

- A) $f(x) = x^2$
- B) $f(x) = |x|$
- C) $f(x) = kx$
- D) $f(x) = 1$

9.

$$f(2x) = 4f(x)$$

Polinom yechimni toping.

- A) $f(x) = x$
- B) $f(x) = 2x$
- C) $f(x) = x^2$
- D) $f(x) = x^3$

10.

$$f(x + 1) + f(x - 1) = 2f(x)$$

Bu tenglama qaysi turga kiradi?

- A) Toza Cauchy
- B) Ko'paytiruvchi
- C) Siljishli (farqli)
- D) Logarifmik

11.

$$f(x + y) = f(x) + f(y) + 1$$

Konstant yechimni toping.

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

12.

$$f(x) = x^2$$

Bu funksiya ($R \rightarrow R$) qanday?

- A) Injektiv
- B) Sur'yektiv
- C) Bijektiv
- D) Injektiv emas, sur'yektiv emas

13.

$$f(x + y) + f(x - y) = 2f(x) + 2y^2$$

$f(x)$ ni toping.

- A) x
- B) x^2
- C) $2x^2$
- D) $\frac{x^2}{2}$

14.

$$f(x + y) = f(x)f(y), \quad f \text{ uzluksiz, } f(1) = e$$

$f(x)$ ni toping.

- A) x^e
- B) e^x
- C) $\ln x$
- D) x

15.

$$f(0) = 0, \quad f(n + 1) = f(n) + 2n + 1$$

$f(n)$ nimaga teng?

- A) n
- B) n^2
- C) $n(n + 1)$
- D) $2n^2$

16.

$$f(x - y) = f(x) + f(y)$$

$f(x)$ ni toping.

- A) x
- B) 0
- C) x^2
- D) $|x|$

17.

$f: \mathbf{R} \rightarrow \mathbf{R}$ injektiv bo'lsa, $f(a) = f(b)$ dan nima kelib chiqadi?

- A) $a \leq b$
- B) $a \geq b$
- C) $a = b$
- D) $a + b = 0$

18.

$$f(x) = ax + b$$

Qachon funksiya sur'yektiv bo'ladi?

- A) $a = 0$
- B) $b = 0$
- C) $a \neq 0$
- D) $a = b$

19.

$$f(x + y) = f(x) + f(y)$$

Quyidagilardan qaysi birinchi tekshiriladi?

- A) $f(1)$
- B) $f(0)$
- C) $f(2)$
- D) $f(-1)$

20.

Funksional tenglamalarning asosiy maqsadi nima?

- A) Sonni topish
- B) Funksiyani topish
- C) Integral hisoblash
- D) Grafik chizish

To'g'ri javoblar

- 1. **C**
- 2. **B**
- 3. **C**
- 4. **B**
- 5. **C**
- 6. **B**
- 7. **B**
- 8. **C**
- 9. **C**
- 10. **C**
- 11. **C**
- 12. **D**
- 13. **B**
- 14. **B**
- 15. **B**
- 16. **B**
- 17. **C**
- 18. **C**
- 19. **B**
- 20. **B**