

1. $A = \{(x, y) \in \mathbb{R}^2 : x = y\}$, $B = \{(x, y) \in \mathbb{R}^2 : |x| + |y| \leq 1\}$, $A, B, A \cup B, A \cap B, A \setminus B, B \setminus A, A \Delta B$ to'plamlarni aniqlang va tasvirlang.
2. $A = \{(x, y) \in \mathbb{R}^2 : y = -x\}$, $B = \{(x, y) \in \mathbb{R}^2 : x^2 + y^2 \leq 1\}$, $A, B, A \cup B, A \cap B, A \setminus B, B \setminus A, A \Delta B$ to'plamlarni aniqlang va tasvirlang.
3. $A = \{(x, y) \in \mathbb{R}^2 : y = x^2\}$, $B = \{(x, y) \in \mathbb{R}^2 : x^2 + (y-1)^2 \leq 1\}$, $A, B, A \cup B, A \cap B, A \setminus B, B \setminus A, A \Delta B$ to'plamlarni aniqlang va tasvirlang.
4. $A = \{(x, y) \in \mathbb{R}^2 : xy \geq 0\}$, $B = \{(x, y) \in \mathbb{R}^2 : x^2 + y^2 \geq 1\}$, $A, B, A \cup B, A \cap B, A \setminus B, B \setminus A, A \Delta B$ to'plamlarni aniqlang va tasvirlang.
5. $A = \{(x, y) \in \mathbb{R}^2 : y = -x^2\}$, $B = \{(x, y) \in \mathbb{R}^2 : (x+1)^2 + (y+1)^2 \leq 1\}$, $A, B, A \cup B, A \cap B, A \setminus B, B \setminus A, A \Delta B$ to'plamlarni aniqlang va tasvirlang.
6. $A = \{(x, y) \in \mathbb{R}^2 : xy \leq 0\}$, $B = \{(x, y) \in \mathbb{R}^2 : |x| + |y| \geq 1\}$, $A, B, A \cup B, A \cap B, A \setminus B, B \setminus A, A \Delta B$ to'plamlarni aniqlang va tasvirlang.
7. $A = \{(x, y) \in \mathbb{R}^2 : x \geq y\}$, $B = \{(x, y) \in \mathbb{R}^2 : 9x^2 + y^2 \leq 36\}$, $A, B, A \cup B, A \cap B, A \setminus B, B \setminus A, A \Delta B$ to'plamlarni aniqlang va tasvirlang.
8. $A = \{(x, y) \in \mathbb{R}^2 : x \leq y\}$, $B = \{(x, y) \in \mathbb{R}^2 : 4x^2 + 9y^2 \geq 36\}$, $A, B, A \cup B, A \cap B, A \setminus B, B \setminus A, A \Delta B$ to'plamlarni aniqlang va tasvirlang.
9. $A = \{(x, y) \in \mathbb{R}^2 : \max\{|x|, |y|\} = 1\}$, $B = \{(x, y) \in \mathbb{R}^2 : x^2 + y^2 \leq 1\}$, $A, B, A \cup B, A \cap B, A \setminus B, B \setminus A, A \Delta B$ to'plamlarni aniqlang va tasvirlang.
10. $A = \{(x, y) \in \mathbb{R}^2 : \max\{|x|, |y|\} \leq 2\}$, $B = \{(x, y) \in \mathbb{R}^2 : y \geq x+1\}$, $A, B, A \cup B, A \cap B, A \setminus B, B \setminus A, A \Delta B$ to'plamlarni aniqlang va tasvirlang.
11. $A = \{(x, y) \in \mathbb{R}^2 : y \geq x^2\}$, $B = \{(x, y) \in \mathbb{R}^2 : y \leq 4 - x^2\}$, $A, B, A \cup B, A \cap B, A \setminus B, B \setminus A, A \Delta B$ to'plamlarni aniqlang va tasvirlang.
12. $A = \{(x, y) \in \mathbb{R}^2 : x = -y\}$, $B = \{(x, y) \in \mathbb{R}^2 : |x| + |y| \leq 2\}$, $A, B, A \cup B, A \cap B, A \setminus B, B \setminus A, A \Delta B$ to'plamlarni aniqlang va tasvirlang.
13. $A = \{(x, y) \in \mathbb{R}^2 : |x| + |y| \geq 3\}$, $B = \{(x, y) \in \mathbb{R}^2 : \max\{|x|, |y|\} \leq 2\}$, $A, B, A \cup B, A \cap B, A \setminus B, B \setminus A, A \Delta B$ to'plamlarni aniqlang va tasvirlang.
14. $A = \{(x, y) \in \mathbb{R}^2 : y = -x^2\}$, $B = \{(x, y) \in \mathbb{R}^2 : (x-1)^2 + (y-1)^2 \leq 1\}$, $A, B, A \cup B, A \cap B, A \setminus B, B \setminus A, A \Delta B$ to'plamlarni aniqlang va tasvirlang.
15. $A = \{(x, y) \in \mathbb{R}^2 : xy \leq 0\}$, $B = \{(x, y) \in \mathbb{R}^2 : x^2 + (y+1)^2 \geq 1\}$, $A, B, A \cup B, A \cap B, A \setminus B, B \setminus A, A \Delta B$ to'plamlarni aniqlang va tasvirlang.

16. $A = \{(x, y) \in \mathbb{R}^2 : xy \leq 0\}$, $B = \{(x, y) \in \mathbb{R}^2 : x^2 + y^2 \geq 4\}$,
 $A, B, A \cup B, A \cap B, A \setminus B, B \setminus A, A \Delta B$ to'plamlarni aniqlang va tasvirlang.
17. $A = \{(x, y) \in \mathbb{R}^2 : y = x^2\}$, $B = \{(x, y) \in \mathbb{R}^2 : (x-1)^2 + (y-1)^2 \leq 4\}$,
 $A, B, A \cup B, A \cap B, A \setminus B, B \setminus A, A \Delta B$ to'plamlarni aniqlang va tasvirlang.
18. $A = \{(x, y) \in \mathbb{R}^2 : x^2 = y\}$, $B = \{(x, y) \in \mathbb{R}^2 : x^2 + y^2 \geq 4\}$,
 $A, B, A \cup B, A \cap B, A \setminus B, B \setminus A, A \Delta B$ to'plamlarni aniqlang va tasvirlang.
19. $A = \{(x, y) \in \mathbb{R}^2 : xy \geq 0\}$, $B = \{(x, y) \in \mathbb{R}^2 : |x| + |y - 2| \geq 1\}$,
 $A, B, A \cup B, A \cap B, A \setminus B, B \setminus A, A \Delta B$ to'plamlarni aniqlang va tasvirlang.
20. $A = \{(x, y) \in \mathbb{R}^2 : x = -y\}$, $B = \{(x, y) \in \mathbb{R}^2 : (x-2)^2 + (y+3)^2 \geq 1\}$,
 $A, B, A \cup B, A \cap B, A \setminus B, B \setminus A, A \Delta B$ to'plamlarni aniqlang va tasvirlang.
21. $A = \{(x, y) \in \mathbb{R}^2 : x \leq y\}$, $B = \{(x, y) \in \mathbb{R}^2 : 9x^2 + y^2 \leq 9\}$,
 $A, B, A \cup B, A \cap B, A \setminus B, B \setminus A, A \Delta B$ to'plamlarni aniqlang va tasvirlang.
22. $A = \{(x, y) \in \mathbb{R}^2 : x \geq y\}$, $B = \{(x, y) \in \mathbb{R}^2 : x^2 + 4y^2 \geq 4\}$,
 $A, B, A \cup B, A \cap B, A \setminus B, B \setminus A, A \Delta B$ to'plamlarni aniqlang va tasvirlang.
23. $A = \{(x, y) \in \mathbb{R}^2 : |x| + |y| \leq 2\}$, $B = \{(x, y) \in \mathbb{R}^2 : 9x^2 + y^2 \geq 9\}$,
 $A, B, A \cup B, A \cap B, A \setminus B, B \setminus A, A \Delta B$ to'plamlarni aniqlang va tasvirlang.
24. $A = \{(x, y) \in \mathbb{R}^2 : \max\{|x|, |y|\} \leq 2\}$, $B = \{(x, y) \in \mathbb{R}^2 : x^2 + 1 \leq y\}$,
 $A, B, A \cup B, A \cap B, A \setminus B, B \setminus A, A \Delta B$ to'plamlarni aniqlang va tasvirlang.
25. $A = \{(x, y) \in \mathbb{R}^2 : \max\{|x|, |y|\} \leq 2\}$, $B = \{(x, y) \in \mathbb{R}^2 : 4 - x^2 \geq y\}$,
 $A, B, A \cup B, A \cap B, A \setminus B, B \setminus A, A \Delta B$ to'plamlarni aniqlang va tasvirlang.
1. $[0; 6]$ va $[0; 5] \cup [7; 8]$ to'plamlar orasida bir qiymatli moslik o'rnating.
2. $(0; 6]$ va $(2; 4) \cup [7; 11]$ to'plamlar orasida bir qiymatli moslik o'rnating.
3. $[2; 6]$ va $[2; 4) \cup [11; 13]$ to'plamlar orasida bir qiymatli moslik o'rnating.
4. $[1; 6]$ va $[1; 4) \cup [7; 9]$ to'plamlar orasida bir qiymatli moslik o'rnating.
5. $[3; 7]$ va $[0; 2) \cup [6; 8]$ to'plamlar orasida bir qiymatli moslik o'rnating.
6. $[1; 7]$ va $[-1; 4) \cup [6; 7]$ to'plamlar orasida bir qiymatli moslik o'rnating.
7. $(-1; 5]$ va $(-1; 1] \cup (3; 7]$ to'plamlar orasida bir qiymatli moslik o'rnating.
8. $[-2; 4]$ va $[-2; 1) \cup [2; 5]$ to'plamlar orasida bir qiymatli moslik o'rnating.
9. $[1; 5]$ va $[1; 2) \cup [7; 10]$ to'plamlar orasida bir qiymatli moslik o'rnating.

10. $[2;5]$ va $[0;1) \cup [3;5]$ to'plamlar orasida bir qiymatli moslik o'rnating.
11. $(3;6]$ va $(-3;-1) \cup [2;3]$ to'plamlar orasida bir qiymatli moslik o'rnating.
12. $[2;6]$ va $[-2;1) \cup [4;5]$ to'plamlar orasida bir qiymatli moslik o'rnating.
13. $[0;5]$ va $[-2;2) \cup [3;4]$ to'plamlar orasida bir qiymatli moslik o'rnating.
14. $[0;4]$ va $[-2;0) \cup [7;9]$ to'plamlar orasida bir qiymatli moslik o'rnating.
15. $[-2;3]$ va $[-3;1) \cup [2;3]$ to'plamlar orasida bir qiymatli moslik o'rnating.
16. $[0;3]$ va $[2;4) \cup [5;6]$ to'plamlar orasida bir qiymatli moslik o'rnating.
17. $(-2;6]$ va $(-3;-1) \cup [1;7]$ to'plamlar orasida bir qiymatli moslik o'rnating.
18. $[-1;3]$ va $[-4;-1) \cup [2;3]$ to'plamlar orasida bir qiymatli moslik o'rnating.
19. $[-3;1]$ va $[-2;1) \cup [4;5]$ to'plamlar orasida bir qiymatli moslik o'rnating.
20. $(-4;1]$ va $(-1;3) \cup [8;9]$ to'plamlar orasida bir qiymatli moslik o'rnating.
21. $[-2;5]$ va $[2;4) \cup (7;12]$ to'plamlar orasida bir qiymatli moslik o'rnating.
22. $(1;7]$ va $(2;4) \cup [9;13]$ to'plamlar orasida bir qiymatli moslik o'rnating.
23. $[-3;2]$ va $[2;4) \cup [5;8]$ to'plamlar orasida bir qiymatli moslik o'rnating.
24. $[-3;7]$ va $[2;5) \cup [8;15]$ to'plamlar orasida bir qiymatli moslik o'rnating.
25. $(-3;4]$ va $(1;4) \cup (6;10]$ to'plamlar orasida bir qiymatli moslik o'rnating.
26. $[-3;3]$ va $[0;4) \cup [7;9]$ to'plamlar orasida bir qiymatli moslik o'rnating.
27. $[-1;5]$ va $[-1;4) \cup [7;8]$ to'plamlar orasida bir qiymatli moslik o'rnating.
28. $[0;5]$ va $[-2;0) \cup [1;4]$ to'plamlar orasida bir qiymatli moslik o'rnating.
29. $[-2;4]$ va $[0;4) \cup [5;7]$ to'plamlar orasida bir qiymatli moslik o'rnating.
30. $[-2;2]$ va $[1;3) \cup (5;7]$ to'plamlar orasida bir qiymatli moslik o'rnating.
31. $[-1;7]$ va $[-2;4) \cup [7;9]$ to'plamlar orasida bir qiymatli moslik o'rnating.
32. $[2;7]$ va $[-2;-1) \cup [2;4]$ to'plamlar orasida bir qiymatli moslik o'rnating.
33. $[-4;1]$ va $[-3;-1) \cup [3;6]$ to'plamlar orasida bir qiymatli moslik o'rnating.
34. $[-2;1]$ va $[1;2) \cup [3;5]$ to'plamlar orasida bir qiymatli moslik o'rnating.
35. $[-4;0]$ va $[0;3) \cup [5;6]$ to'plamlar orasida bir qiymatli moslik o'rnating.
1. $[0,1]$ kesmada joylashgan nuqtalarning o'nli kasr yoyilmasida 1 raqami qatnashmagan nuqtalar to'plamining Lebeg o'lchovini toping.
2. $[0,2]$ kesmada joylashgan nuqtalarning o'nli kasr yoyilmasida 2 raqami qatnashmagan nuqtalar to'plamining Lebeg o'lchovini toping.

3. [1,3] kesmada joylashgan nuqtalarning o'nli kasr yoyilmasida 3 raqami qatnashmagan nuqtalarto'plamining Lebeg o'lchovini toping.
4. [2,4] kesmada joylashgan nuqtalarning o'nli kasr yoyilmasida 4 raqami qatnashmagan nuqtalarto'plamining Lebeg o'lchovini toping.
5. [3,5] kesmada joylashgan nuqtalarning o'nli kasr yoyilmasida 5 raqami qatnashmagan nuqtalarto'plamining Lebeg o'lchovini toping.
6. [4,6] kesmada joylashgan nuqtalarning o'nli kasr yoyilmasida 6 raqami qatnashmagan nuqtalarto'plamining Lebeg o'lchovini toping.
7. [5,7] kesmada joylashgan nuqtalarning o'nli kasr yoyilmasida 7 raqami qatnashmagan nuqtalarto'plamining Lebeg o'lchovini toping.
8. [6,8] kesmada joylashgan nuqtalarning o'nli kasr yoyilmasida 8 raqami qatnashmagan nuqtalarto'plamining Lebeg o'lchovini toping.
9. [7,9] kesmada joylashgan nuqtalarning onliq kasr yoyilmasida 9 raqami qatnashmagan nuqtalarto'plamining Lebeg o'lchovini toping.
10. [8,10] kesmada joylashgan nuqtalarning o'nli kasr yoyilmasida 0 raqami qatnashmagan nuqtalarto'plamining Lebeg o'lchovini toping.
11. [3,4] kesmada joylashgan nuqtalarning o'nli kasr yoyilmasida 1 raqami qatnashmagan nuqtalarto'plamining Lebeg o'lchovini toping.
12. [0,2] kesmada joylashgan nuqtalarning o'nli kasr yoyilmasida 3 raqami qatnashmagan nuqtalarto'plamining Lebeg o'lchovini toping.
13. [1,3] kesmada joylashgan nuqtalarning o'nli kasr yoyilmasida 4 raqami qatnashmagan nuqtalarto'plamining Lebeg o'lchovini toping.
14. [2,4] kesmada joylashgan nuqtalarning o'nli kasr yoyilmasida 5 raqami qatnashmagan nuqtalarto'plamining Lebeg o'lchovini toping.
15. [3,5] kesmada joylashgan nuqtalarning o'nli kasr yoyilmasida 6 raqami qatnashmagan nuqtalarto'plamining Lebeg o'lchovini toping.
16. [4,6] kesmada joylashgan nuqtalarning o'nli kasr yoyilmasida 7 raqami qatnashmagan nuqtalarto'plamining Lebeg o'lchovini toping.
17. [5,7] kesmada joylashgan nuqtalarning o'nli kasr yoyilmasida 8 raqami qatnashmagan nuqtalarto'plamining Lebeg o'lchovini toping.
18. [6,8] kesmada joylashgan nuqtalarning o'nli kasr yoyilmasida 9 raqami qatnashmagan nuqtalarto'plamining Lebeg o'lchovini toping.
19. [7,9] kesmada joylashgan nuqtalarning o'nli kasr yoyilmasida 0 raqami qatnashmagan nuqtalarto'plamining Lebeg o'lchovini toping.
20. [8,10] kesmada joylashgan nuqtalarning o'nli kasr yoyilmasida 6 raqami qatnashmagan nuqtalarto'plamining Lebeg o'lchovini toping.

Metrik fazolar ke'nisliklar

Quyidagi misollarda $\rho: X \times X \rightarrow R$ akslantirishining metrika aksiomalarini qanoatlantirishini tekshiring.

$$1. \rho(x, y) = 2 \max_{a \leq t \leq b} |x(t) - y(t)| + 3 \max_{a \leq t \leq b} |x'(t) - y'(t)|, \quad x, y \in C^{(1)}[a, b]$$

$$2. \rho(x, y) = 8 \max_{1 \leq i \leq n} |x_i - y_i|, \quad x, y \in R^n$$

$$3. \rho(f, g) = 5 \max_{a \leq x \leq b} |f(x) - g(x)|, \quad f, g \in C[a, b]$$

$$4. \rho(f, g) = \sqrt{2} \int_a^b |f(x) - g(x)| dx, \quad f, g \in C[a, b]$$

$$5. \rho(x, y) = 7 \sup_{1 \leq n < \infty} |x_n - y_n|, \quad x, y \in m.$$

$$6. \rho(x, y) = 2 \sup_{1 \leq n < \infty} |x_n - y_n|, \quad x, y \in c$$

$$7. \rho(x, y) = \sqrt{5} \sup_{1 \leq n < \infty} |x_n - y_n|, \quad x, y \in c_0$$

$$8. \rho(x, y) = (x - y)^2, \quad x, y \in R.$$

$$9. \rho(x, y) = |\sin x - \sin y|, \quad x, y \in R.$$

$$11. \rho(x, y) = |x_1 - y_1| + |x_2 - y_2|, \quad x, y \in R^3$$

$$12. \rho(f, g) = |f(0) - g(0)| + |f(1) - g(1)|, \quad f, g \in C[a, b]$$

$$13. \rho(x, y) = |x_1 - y_2| + |y_1 - x_2|, \quad x, y \in R^2$$

$$14. \rho(x, y) = |x_1 - y_1| + 2|x_2 - y_2|^2, \quad x, y \in R^2.$$

Quyidagi misollarda $x \in X$ va $y \in X$ elementlar orasidagi oraliqni toping.

$$15. X = C[0, \pi], \quad x(t) = \sin t, \quad y = \cos t.$$

$$16. X = m, \quad x = \left(2, 1, \frac{1}{2}, \frac{1}{4}, \dots\right), \quad y = \left(-1, -\frac{1}{2}, -\frac{1}{4}, \dots\right)$$

$$17. X = R^3, \quad x = (8; 4; 3), \quad y = (6; 0; -1)$$

$$18. X = m, \quad x = (-1, 1, -1, 1, \dots, -1, 1, \dots), y = \left(0, \frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \dots, \frac{n}{n+1}, \dots\right)$$

1. $\int_E f(x) d\mu$ Lebeg integralini hisoblang

$$f(x) = \begin{cases} \frac{1}{\sqrt{x}}, & x \in \mathbb{I} \cap \left[\frac{1}{16}, 1\right] \\ \frac{4}{x}, & x \in \mathbb{I} \cap \left[1, \frac{5}{4}\right] \\ \sin^2 x, & x \in \mathbb{Q} \end{cases} \quad E = \left[\frac{1}{16}, \frac{5}{4}\right]$$

2. $\int_E f(x) d\mu$ Lebeg integralini hisoblang $E = [0, 1]$, $f(x) = \begin{cases} \frac{1}{(x+1)^3} & x \in \mathbb{I} \cap [0, 1] \\ 7x, & x \in \mathbb{Q} \end{cases}$

3. $\int_E f(x) d\mu$ Lebeg integralini hisoblang $f(x) = \begin{cases} \frac{1}{\sqrt{x}} & x \in \mathbb{I} \cap [0, 4] \\ \frac{3}{x^2}, & x \in \mathbb{I} \cap [4, 5], \quad E = [0, 5] \\ x^2, & x \in \mathbb{Q} \end{cases}$

4. $\int_E f(x) d\mu$ Lebeg integralini hisoblang

$f(x) = \begin{cases} \frac{2x}{\sqrt{(x^2+1)^3}}, & x \in \mathbb{I} \cap [0, \sqrt{3}] \\ \frac{1}{x^3}, & x \in \mathbb{I} \cap [\sqrt{3}, 3], \quad E = [0, 3] \\ \ln(1+x) & x \in \mathbb{Q} \end{cases}$

5. $\int_E f(x) d\mu$ Lebeg integralini hisoblang $E = [0, 1]$, $f(x) = \begin{cases} \frac{1}{\sqrt{x}}, & x \in \mathbb{I} \cap [0, 1] \\ \sin x, & x \in \mathbb{Q} \end{cases}$

6. $\int_E f(x) d\mu$ Lebeg integralini hisoblang

$f(x) = \begin{cases} 2 \cdot \frac{x^2-1}{x+1}, & x \in \mathbb{I} \cap \left[0, \frac{1}{\sqrt{3}}\right] \\ 6 \cdot \frac{x^4-1}{x^2+1}, & x \in \mathbb{I} \cap \left[\frac{1}{\sqrt{3}}, \sqrt{3}\right], \quad E = [0, 3] \\ 7, & x \in \mathbb{Q} \end{cases}$

7. $\int_E f(x) d\mu$ Lebeg integralini hisoblang

$f(x) = \begin{cases} \frac{1}{\cos^2 x \sqrt{1+\operatorname{tg} x}}, & x \in \mathbb{Q} \cap \left[0, \frac{\pi}{4}\right] \\ 6x^2 + 4, & x \in \mathbb{I} \cap \left[0, \frac{\pi}{4}\right], \quad E = \left[0, \frac{\pi}{4}\right] \end{cases}$

8. $\int_E f(x) d\mu$ Lebeg integralini hisoblang

$$f(x) = \begin{cases} \frac{x^2}{(x+2)^2(x+4)^2}, & x \in \mathbb{Q} \cap [2, 4] \\ 4x^3, & x \in \mathbb{I} \cap [2, 4], \quad E = [2, 4] \end{cases}$$

9. $\int_E f(x) d\mu$ Lebeg integralini hisoblang

$$f(x) = \begin{cases} \frac{\sqrt{(1-x)^2}}{x^2}, & x \in \mathbb{Q} \cap \left[\frac{1}{2}, 1\right] \\ 3x^2 + 2x, & x \in \mathbb{I} \cap \left[\frac{1}{2}, 1\right], \quad E = \left[\frac{1}{2}, 1\right] \end{cases}$$

10. $\int_E f(x) d\mu$ Lebeg integralini hisoblang

$$f(x) = \begin{cases} \frac{x^2}{(x-2)^2(x-4)^2}, & x \in \mathbb{Q} \cap [0, 4] \\ 3x^2 - 2, & x \in \mathbb{I} \cap [0, 4], \quad E = [0, 4] \end{cases}$$

Evklid fazosi

Quydagı formula ko'rnishida berilgan p funksional, ko'rsatilgan haqiqiy chiziqli fazoda skalyar ko'paytma shartlarin qanoatlantiradimi?

$$1. E = \ell_2, \quad p(x, y) = \sum_{k=1}^{\infty} \lambda_k x_k y_k, \quad 0 < \lambda_n < 1.$$

$$2. E = R^2, \quad p(x, y) = \sqrt{(x_1^2 + x_2^2)(y_1^2 + y_2^2)}.$$

$$3. E = C[a, b], \quad p(x, y) = \int_a^b e^t x(t) y(t) dt.$$

$$4. E = R^3, \quad p(x, y) = x_1 y_1 + x_2 y_2 - x_3 y_3.$$

$$5. E = R^2, \quad p(x, y) = x_1 y_1 - x_2 y_2.$$

$$6. E = R^2, \quad p(x, y) = x_1 y_1 - x_2 y_1 + 2x_2 y_2.$$

$$7. E = R^3, \quad p(x, y) = x_1 y_1 + x_2 y_2 - x_3 y_3.$$

$$8. E = C[a, b], \quad p(x, y) = \int_a^b x^4(t) y^4(t) dt$$

Chegaralangan bo'lsa normasini toping.

$$1. f : C[-1, 1] \rightarrow R, \quad f(x) = \frac{1}{3}[x(-1) + x(1)]$$

$$2. f : C[-1, 1] \rightarrow R, \quad f(x) = 2[x(1) - x(0)]$$

$$3. f : \ell_1 \rightarrow R, \quad f(x) = \sum_{k=1}^{\infty} x_k$$

$$4. f: \ell_2 \rightarrow R, \quad f(x) = x_1 + x_3 + x_5 + x_7$$

$$5. f: \ell_2 \rightarrow R, \quad f(x) = x_2 + x_4 + x_6 + \dots + x_{200}$$

$$6. f: \ell_2 \rightarrow R, \quad f(x) = \sum_{k=1}^{\infty} \frac{1}{3^{n/2}} \cdot x_k$$

Quyidagi operatorlarning chiziqli chegaralangan ekanligini ko'rsating, ularning normasini toping

$$7. A: C[-2, 2] \rightarrow C[-2, 2], \quad (Ax)(t) = te^t x(t).$$

$$8. A: C[-1, 1] \rightarrow C[-1, 1], \quad (Ax)(t) = \sqrt[5]{1-t} x(t).$$

$$9. A: \ell_2 \rightarrow \ell_2, \quad Ax = ((1+1)x_1, (1+1/2)x_2, \dots, (1+1/n)x_n, \dots).$$

$$10. A: \ell_2 \rightarrow \ell_2, \quad Ax = \left(\frac{1}{2}x_1, \frac{1}{\sqrt{2}}x_2, \dots, \frac{1}{\sqrt[n]{2}}x_n, \dots \right).$$

$$11. A: \ell_2 \rightarrow \ell_2, \quad Ax = \left(\frac{1}{5}x_1, \frac{1}{5^2}x_2, \dots, \frac{1}{5^n}x_n, \dots \right).$$

$$12. A: C[-1, 1] \rightarrow C[-1, 1], \quad (Ax)(t) = \int_{-1}^1 (ts + t^2 s^2) x(s) ds.$$

$$13. A: C[-1, 1] \rightarrow C[-1, 1], \quad (Ax)(t) = \int_{-1}^1 (t+s)^2 x(s) ds.$$

$$14. A: C[0, 1] \rightarrow C[0, 1], \quad (Ax)(t) = t^2 x(t) + t^3 x(t).$$