

**28-Mavzu. Logarifmik funksiya**

1.  $2 \log_4 8 - 3 \log_8 4 + \log_2 32 + 18$  ni hisoblang.

- A) 22   B) 24   C) 26   D) 20

2.  $\log_2 \log_4 \sqrt{\sqrt[8]{4}}$  ni hisoblang.

- A) -4   B) -2   C) -8   D) -3

3. Hisoblang:  $\lg \frac{9000^4}{50^9} + \lg \frac{1250^3}{1024000} + \lg \frac{3200^2}{810^2}$

- A) 3   B) 4   C) 5   D) 6

4. Hisoblang:  $9^{\log_3 5 + 2 \log_1 4}$

- A)  $\frac{25}{16}$    B)  $\frac{9}{5}$    C) 9   D) 1

5.  $2^{200}$  necha xonali son? ( $\lg 2 = 0,3010\dots$ )

- A) 62   B) 61   C) 60   D) 59

6.  $\log_{\frac{1}{3}} \frac{\sqrt{3}}{7+2\sqrt{10}} + \log_{\sqrt{3}} \frac{1}{\sqrt{5}+\sqrt{2}}$  ni hisoblang

- A) -2   B) -1   C)  $-\frac{1}{2}$    D) 2

7.  $\sqrt{2}^{\log_2 72} + 5^{\log_3 9}$  sonidan oshmaydigan natural sonlar nechta?

- A) 17   B) 33   C) 34   D) 42

8.  $\frac{\log_9 12}{\log_{36} 3} - \frac{\log_9 4}{\log_{108} 3}$  ni hisoblang

- A) 2   B) 3   C) 6   D) 1

9.  $\frac{\log_2 40}{\log_{160} 2} - \frac{\log_2 320}{\log_{20} 2}$  ni hisoblang.

- A) 0   B) 1   C) 2   D) 3

10.  $3 \cdot 5^{\lg 1} - 3^{\lg 25} + 5^{\lg 9}$  ifodaning qiymatini toping.

- A) 1   B) 3   C) 5   D) 7

11. Hisoblang:  $\left( 2^{\frac{\log_2 5}{\log_5 2}} - 5^{\frac{1}{\log_5 2}} + 5^{\log_5 25} \right)^{0,5}$ .

- A) 25   B) 20   C) 5   D) 0,2

12. Hisoblang:  $(\log_5 4 + \log_4 5 + 2) \cdot (\log_5 4 - \log_{20} 4) \cdot \log_4 5 - \log_5 4$ .  
A) 1 B) 2 C) 3 D) 4
13.  $\frac{1+2 \log_3 2}{(1+\log_3 2)^2} + \log_6^2 2$  ni hisoblang.  
A) 2 B) 0,5 C) 1 D)  $\frac{1}{4}$
14.  $\frac{\log_2^2 14 + \log_2 14 \cdot \log_2 7 - 2 \log_2^2 7}{\log_2 14 \cdot \log_7 2 + 2}$  ni soddalashtiring.  
A)  $\log_2 7$  B) 2 C) 1 D)  $-\log_2 7$
15. Hisoblang  $[\lg 27] + [\lg 0,27] + [\lg 0,027]$   
(bunda  $[a]$ - $a$  sonining butun qismi)  
A) -3 B) -2 C) -1 D) 1
16.  $\log_5 7 + \log_7 5$  yig'indining qiymati qaysi oraliqda yotadi?  
A) (1; 2) B) (2;  $\infty$ ) C) ( $-\infty$ ; 2) D) (0; 2)
17.  $\lg 5 = a$  va  $\lg 3 = b$  bo'lsa,  $\log_{30} 8$  ni  $a$  va  $b$  orqali ifodalang.  
A)  $\frac{a}{2a+3b}$  B)  $\frac{b-3}{1-2a}$  C)  $\frac{3a-3}{b+2}$  D)  $\frac{3(1-a)}{1+b}$
18.  $\log_a 64 = 3$  va  $\log_b 243 = 5$  bo'lsa,  $ab$  ning qiymatini toping.  
A) 12 B) 5 C) 6 D) 8
19.  $\log_4(\sqrt{5} - 1) + \log_4(\sqrt{8} - 2) = a$  bo'lsa,  $\log_4(\sqrt{5} + 1) + \log_4(\sqrt{8} + 2)$  yig'indini toping.  
A)  $\sqrt{3} - a$  B)  $1,5 - a$  C)  $1 - a$  D)  $2 - a$
20.  $a = \log_6 108$  bo'lsa,  $\log_2 3$  ni  $a$  orqali ifodalang.  
A)  $\frac{a-2}{3+a}$  B)  $\frac{a+2}{3+a}$  C)  $\frac{a-2}{3-a}$  D)  $\frac{2-a}{3+a}$
21. Agar  $2^a = 5$  va  $20^b = 625$  bo'lsa,  $a$  ni  $b$  orqali ifodalang.  
A)  $\frac{2b}{3-b}$  B)  $\frac{2b}{4-b}$  C)  $\frac{2b}{4+b}$  D)  $\frac{3-b}{b}$
22.  $\lg 2 = m$ ,  $\lg 5 = n$  va  $\lg 1400 = p$  bo'lsa,  $\lg 7 = ?$   
A)  $p+3m+2n$  B)  $p-3m-2n$  C)  $p-2m-3n$  D)  $p+2m+3n$
23.  $\log_b 16 = a$ ,  $b^c = 64$ ,  $a^a = 25$  bo'lsa,  $a^c$  ni toping.  
A) 125 B) 225 C) 25 D) 128

24. Agar  $a = \log_{\frac{1}{2}} 3$ ,  $b = \log_{\frac{1}{4}} 5$ , va  $c = \log_{\frac{1}{2}} 5$  bo'lsa,  $a$ ,  $b$  va  $c$  sonlari uchun quyidagi munosobatlardan qaysi biri o'rinli?

- A)  $a < b < c$     B)  $c < a < b$     C)  $b < c < a$     D)  $b < a < c$

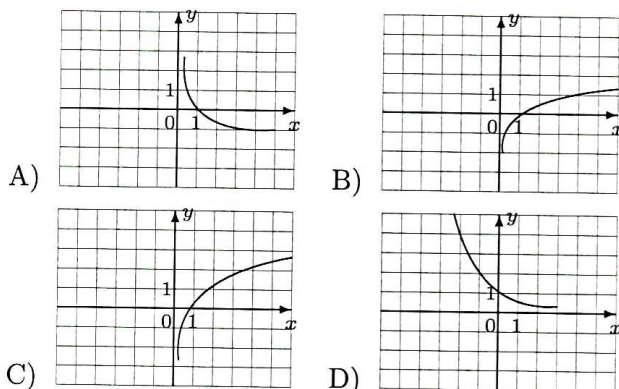
25.  $a = \log_{\frac{1}{5}} 4$ ,  $b = \log_{\frac{1}{5}} 6$  va  $c = \log_{\frac{1}{6}} 4$  bo'lsa,  $a$ ,  $b$  va  $c$  sonlari uchun quyidagi munosobatlardan qaysi biri o'rinli?

- A)  $c < b < a$     B)  $c < a < b$     C)  $b < c < a$     D)  $b < a < c$

26.  $a = \log_{0,2} 8$ ,  $b = \log_4 2$ ,  $c = \log_{0,8} 0,6$ ,  $d = \log_3 0,8$  va  $l = \log_{0,9} 2$  sonlardan qaysilari musbat?

- A)  $a, d$  va  $l$     B)  $b$  va  $c$     C)  $a, c$  va  $d$     D)  $c$  va  $d$

27. Qaysi chizmada  $y = \log_4 x$  funktsiya grafigi taqriban tasvirlangan?



28.  $y = \log_{x-1}(5-x)$  funktsiyaning aniqlanish sohasiga tegishli butun sonlarning yig'indisini toping.

- A) 5    B) 6    C) 7    D) 9

29.  $y = \log_3(x+1)$  funktsiyaga teskari funktsiyani toping.

- A)  $y = 3^x - 1$     B)  $y = \log_3(1-x)$     C)  $y = \frac{1}{\log_3(1+x)}$     D)  $y = 3^{x-1}$

30.  $y = 2x - 1 + 4^{\log_4(4x-x^2)}$  funktsiyaning qiymatlar sohasini toping

- A) (8;9)    B) (0;9]    C) (-1;8]    D) (4;6)

31. Quyida berilganlardan juft funktsiyani toping

- A)  $y = \lg \left| \frac{1-x}{1+x} \right|$     B)  $y = 3^x + 3^{-x}$     C)  $y = 2^x - 2^{-x}$     D)  $y = \lg(1-x)^2$

32. Juft funksiyalarni toping :  $y_1 = 3^x + 3^{-x}$ ,  $y_2 = 3x^5 + x^3$ ,  
 $y_3 = \sqrt{20 - x + x^2} + \sqrt{20 + x + x^2}$ ,  $y_4 = \log_3 4x + 1$ ,  $y_5 = x^2 + \lg |x|$   
 A)  $y_1, y_4$  B)  $y_1, y_2$  C)  $y_1, y_3, y_5$  D)  $y_2$
33.  $y = \log_3 |x - 5| - 1$  funksiya grafigi koordinata tekisligining qaysi choraklarida joylashgan?  
 A) I, II, IV B) I, II, III, IV C) I, III, IV D) I, II
34.  $y = |\log_5 x|$  funksiya grafigi koordinata tekisligining qaysi choraklarida joylashgan?  
 A) I va II B) faqat I C) III va IV D) I, II, III va IV
35. Agar  $5^a = 36$ ,  $6^b = 625$  bo'lsa,  $a \cdot b$  ning qiymatini toping.  
 A) 8 B) 10 C) 11 D) 13
36. Ifodani soddalashtiring:  $\frac{1 - \log_a^3 b}{(\log_a b + \log_b a + 1) \cdot \log_{a/b} a} \cdot \log_b a$   
 A) 0 B) 1 C) 2 D) 3
37. Tenglamaning ildizlarini toping:  $5^{2 \log_5 x} = 64$   
 A) 7 B) 8 C)  $\pm 8$  D)  $\pm 5$
38. Tenglamani yeching:  $6 \cdot 5^{\log_2 x} + 2 \cdot 5^{\log_2 x - 1} = 12 \cdot x^2 + 2 \cdot 4^{\log_2 x - 1}$   
 A) 4 B) 8 C) 16 D) 32
39.  $4^x - 5 \cdot 2^x + 3 = 0$  tenglamaning ildizlari yig'indisini toping.  
 A) 5 B)  $\log_2 5$  C) 3 D)  $\log_2 3$
40. Tenglamada  $x$  ning qabul qilishi mumkin bo'lgan qiymatlarini ko'rsating.  
 $\lg(x - 4) - \lg(x + 5) = \lg(x - 2)$   
 A) (2; 4) B) (4;  $\infty$ ) C) (-5; 4) D) (3;  $\infty$ )

**Kalitlar**

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