

Qurilís fakulteti 2-kurs (uzb) Gidro texnika ushin sorawlar

(2024-2025)

1. Xosmas integralining nechta tu'ri bor
2. Bir jinsli bolmagan differensial tenglamaning umumiy ko'rinishini yozing.
3. Xosmas integralning absolyut yaqinlashuvchi bolishi uchun qaysi sha'rt orinli bolishi kerak.
4. O'zgaruvchilari ajiraladigan differensial tenglamaning umuiy ko'rnishini yo'zing.
5. Bir o'zgaruvchili funksiyaning Teylor formulasini yozing.
6. Xosmas integral chartli yaqinlashuvchi bolishi uchun qanday shart orinli bolishi kerek.
7. Agar bazi-bir oraliqta aniqlangan $f(x)$ funksiya uchun bu oraliqning barsha qiymatlarida

$$F'(x) = f(x) \text{ yamasa } dF(x) = f(x) dx$$

tenglik orinli bolsa, u holda $F(x)$ funksiya $f(x)$ ning ----- deyiladi.

8. Aniqmas integralni bolaklab integrallash formulasini yozing.
9. Ikki o'zgaruvchili funksiyaning toliq differensialini hisoblash formulasini yozing.
10. Yuqori ta'rtpi differensial tenglamaning umumiy ko'rnishini yozing
11. Ikki o'zgaruvchili $z=f(x,y)$ funksiyaning maximumga erishish shartini yozing
12. $\int dF(x) =$ natijani toping
13. Ikki o'zgaruvchili murakkab funksiyaning toliq differensialini hisoblash formulasini yozing
14. Funksiya bir vaqitning ozida minumum va maximumga erishsa _____ deyiladi.
15. Chiziqli differensial tenglamaning umumiy ko'rnishini yozing.
16. Nyuton-Leybnic formulasini yozing.
17. Ikki o'zgaruvchili funksiyaning ikkinshi tartipli toliq differensialini topish formulasini yozing.
18. Xosmas integralda limitning qiymati chekli songa teng bolsa integral deyiladi
19. Integrallash chegarasi chekli bolgan yoki shegaralanmagan funkciyalardan olingan integrallar ----- deyiladi.
20. Ikki o'zgaruvchili funkciyani ekstremumga tekshirish shartlarini yozing.
21. $\int \frac{1}{a^2 + x^2} dx$ ko'rinishtagi integralning boshlangich funksiyasini toping
22. Aniqmas integralni hisoblang.
 $\int \sin x \cos x dx$
23. $y'' + y' = \frac{1}{\cos x}$ differensial tenglamani
24. Aniq integralni hisoblang
25. $\int_1^e x \ln x dx$
26. Xosmas integralni hisoblang.
 $\int_{-\infty}^{+\infty} \frac{(\arctg x)^4}{1+x^2} dx$
27. Quyidagi funksiyaning toliq differensialini hisoblang

$$z = x^3 + y^2$$

28. Differensial tenglamani yeching.

$$3y'' - 2y' - 8y = 0$$

29. Xosmas integralni hisoblang.

$$\int_1^{+\infty} \frac{\arctg x dx}{x^2 + 1}$$

30. Quyidagi funksiyaning toliq differensiyalini hisoblang.

$$z = 13x^3y$$

31. $y^{IV} + y'' = 0$ ulıwma sheshimin toping

32. Funksiyaning hosilasini hisoblang.

$$y = tg^2(4x), \quad y' = ?$$

33. Aniq integralni hisoblang:

$$\int_0^{\frac{\pi}{2}} \sin^3 x dx$$

34. Xosmas integralni hisoblang.

$$\int_e^{+\infty} \frac{dx}{x \ln^2 x}$$

35. Aniqmas integralni hisoblang: $\int \frac{\ln x}{x} dx$

36. Differensial tenglamaning umumiy yechimini toping.

$$y'' - 7y' + 6y = 0$$

37. Xosmas integralni hisoblang.

$$\int_1^{+\infty} \frac{1}{1 - \sin^2 x} dx$$

38. Aniq integralni hisoblang:

$$\int_1^2 \frac{dx}{2x - 1}$$

39. Differensial tenglamani yeching. $(1 + x^2) dy + y dx = 0$

40. Aniqmas integralni hisoblang: $\int \arcsin x dx$

41. Funksiyaning hosilasini hisoblang.

$$y = \sin^2(\arctg(3x)) + \cos^2(\arctg(3x)), \quad y' = ?$$

42. Aniq integralni hisoblang:

$$\int_0^1 \frac{\arcsin x dx}{\sqrt{1 - x^2}}$$

43. $yy'' = (y')^2$ umumiy yechimini toping

44. Xosmas integralni hisoblang.

$$\int_0^{+\infty} \frac{dx}{\sqrt{(x^2 + 1)^3}}$$

45. Aniqmas integralni hisoblang.

$$\int \sin x \cos x dx$$

46. $y'' + y' = \frac{1}{\cos x}$ differensial tenglamani yeching

47. Aniq integralni hisoblang

$$\int_1^e x \ln x dx$$

48. Xosmas integralni hisoblang.

$$\int_{-\infty}^{+\infty} \frac{(\arctg x)^4}{1 + x^2} dx$$

49. Quyidagi funksiyaning toliq differensiyalini hisoblang

$$z = x^3 + y^2$$

50. Differensial tenglamani yeching.

$$3y'' - 2y' - 8y = 0$$

$\int 2(2x-5)^2 dx = ?$
$\int 2(2x-5)^2 dx = ?$
$\int (x-5)^2 dx = ?$
$\int 5(x-5)^2 dx = ?$
$\int (3x-5)^2 dx = ?$
$\int (x-8)^2 dx = ?$
$\int 2(x-1)^2 dx = ?$
$\int (2x-1)^2 dx = ?$
$\int 9(x-5)^2 dx = ?$
$\int (x+1)^3 dx = ?$
$\int (2x+1)^3 dx = ?$
$\int (x+1)^2 dx = ?$
$\int (x+6)^3 dx = ?$
$\int (3x+1)^3 dx = ?$
$\int (-2 \sin x + 5 \cos x) dx = ?$

$\int (\sin x + 5 \cos x) dx = ?$
$\int (\sin x + \cos x) dx = ?$
$\int (\sin x + 9 \cos x) dx = ?$
$\int (5 \sin x + \cos x) dx = ?$
$\int (2 \sin x - \cos x) dx$
$\int \left(x - \frac{1}{\sin^2 x} \right) dx = ?$
Deffernsaldi esaplan: $\frac{1}{y} dy - x^2 dx = 0$
Deffernsaldi esaplan: $y dy - x^3 dx = 0$
Deffernsaldi esaplan: $\frac{1}{y} dy - x dx = 0$
Deffernsaldi esaplan: $\frac{1}{y} dy - x^2 dx = 0$
Deffernsaldi esaplan: $\operatorname{tg} x dx - \operatorname{ctg} y dy = 0$
Deffernsaldi esaplan: $(1+x^2) dy + y dx = 0$
$\int_1^2 (x^2 - \sqrt{x}) dx = ?$
$\int_1^2 (x^3 - \sqrt{x^2}) dx = ?$
$\int_0^{\frac{\pi}{3}} (\operatorname{tg} x) dx = ?$
$\int_0^1 (\operatorname{arcctg} x) \frac{1}{1+x^2} dx = ?$
$\int_1^e \frac{1 - \ln x}{x} dx = ?$
$\int_0^1 (\operatorname{ctg} x) dx = ?$
$\int_1^2 (x \ln x) dx = ?$
$\int_1^2 \left(x \sqrt{x} - \frac{1}{1-x} \right) dx = ?$

$$\int_0^{\frac{\pi}{6}} (\sin 2x) dx - ?$$

$$\int_0^{\frac{\pi}{3}} \left(\frac{\sin x}{\operatorname{tg}^2 x + 1} \right) dx - ?$$