

Контрольная работа №3. Интегральное исчисление.

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|-----|---------------------------------|-----|--|-----|--|
| 1. | $\int (3x^2 + 1) dx$ | 24. | $\int \sin^2 x \cos x dx$ | 45. | $\int_0^{\frac{\pi}{2}} \sin^3 \varphi d\varphi$ |
| 2. | $\int (4x^3 + x) dx$ | 25. | $\int \sqrt{\sin x} \cos x dx$ | 46. | $\int_0^0 \sqrt{x+4} dx$ |
| 3. | $\int (5x^4 + 5) dx$ | 26. | $\int \sqrt{\cos x} \sin x dx$ | 47. | $\int_0^1 \sqrt{x-4} dx$ |
| 4. | $\int (3x^2 - 6) dx$ | 27. | $\int \sin^3 x dx$ | 48. | $\int_0^1 \frac{2x-1}{x^2-x+1} dx$ |
| 5. | $\int (6x^2 - 1) dx$ | 28. | $\int \cos^3 x dx$ | 49. | $\int_0^{\frac{\pi}{2}} \cos^3 \varphi d\varphi$ |
| 6. | $\int (8x^3 + 1) dx$ | 29. | $\int \sin^4 x \cos x dx$ | 50. | $\int_0^9 (\sqrt{x} + \sqrt[3]{3x}) dx$ |
| 7. | $\int (11x^{10} + 3) dx$ | 30. | $\int \cos^4 x \sin x dx$ | 51. | $\int_0^{\frac{\pi}{2}} x \cos x dx$ |
| 8. | $\int (3x^2 + 2x) dx$ | 31. | $\int \frac{dx}{x\sqrt{x^2-2}}, x = \frac{1}{t}$ | 52. | $\int_1^e \ln x dx$ |
| 9. | $\int (50x^{49} - 1) dx$ | 32. | $\int \frac{dx}{e^x + 1}, x = -\ln t$ | 53. | $\int_0^{\pi} e^x \sin x dx$ |
| 10. | $\int (8x^7 + 2x) dx$ | 33. | $\int x(5x^2-3)^7 dx, 5x^2-3 = t$ | 54. | $\int_0^{\infty} x e^{-x} dx$ |
| 11. | $\int \frac{a}{a-x} dx$ | 34. | $\int \frac{x dx}{\sqrt{x+1}}, t = \sqrt{x+1}$ | 55. | $\int_0^{\pi} e^x \cos x dx$ |
| 12. | $\int \frac{1-3x}{3+2x} dx$ | 35. | $\int \frac{\cos x}{\sqrt{1+\sin^2 x}}, t = \sin x$ | 56. | $\int_0^{\frac{\pi}{2}} x \sin x dx$ |
| 13. | $\int \frac{ax+b}{cx+d} dx$ | 36. | $\int \frac{dx}{2e^x+3}, x = -\ln t$ | 57. | $\int_0^1 x e^x dx$ |
| 14. | $\int \frac{x^2+1}{x-1} dx$ | 37. | $\int x(7x^2-5)^4 dx, 7x^2-5 = t$ | 58. | $\int_0^e x \ln x dx$ |
| 15. | $\int \frac{x^2+5x+7}{x+3} dx$ | 38. | $\int 6x(3x^2-2)^5 dx, 3x^2-2 = t$ | 59. | $\int_0^{\pi} x \sin x dx$ |
| 16. | $\int \frac{x}{a+bx} dx$ | 39. | $\int \frac{x dx}{\sqrt{x+5}}, t = \sqrt{x+5}$ | 60. | $\int_0^{\pi} x \cos x dx$ |
| 17. | $\int \frac{x^4+x^2+1}{x-1} dx$ | 40. | $\int \frac{\sin x dx}{\sqrt{1+\cos^2 x}}, t = \cos x$ | | |
| 18. | $\int \frac{(x-1)^3}{x^4} dx$ | 41. | $\int_1^2 (x^2-2x+x^3) dx$ | | |
| 19. | $\int \frac{9+2x}{9x+x^2} dx$ | 42. | $\int_0^8 (\sqrt{2x} + \sqrt[3]{x}) dx$ | | |
| 20. | $\int \frac{b}{x+b} dx$ | 43. | $\int_2^6 \sqrt{x-2} dx$ | | |
| 21. | $\int \operatorname{tg} x dx$ | 44. | $\int_0^1 \frac{2x+1}{x^2+x+2} dx$ | | |
| 22. | $\int \operatorname{ctg} x dx$ | | | | |
| 23. | $\int \cos^2 x \sin x dx$ | | | | |

Соответствие номеров заданий вариантам

Вариант	№1	№2	№3	№4	№5	№6
1	1	20	21	40	41	60
2	2	19	22	39	42	59
3	3	18	23	38	43	58
4	4	17	24	37	44	57
5	5	16	25	36	45	56
6	6	15	26	35	46	55
7	7	14	27	34	47	54
8	8	13	28	33	48	53
9	9	12	29	32	49	52
10	10	11	30	31	50	51
11	1	19	30	32	47	52
12	2	20	29	31	46	53
13	3	17	28	33	45	54
14	4	18	27	34	44	55
15	5	15	26	35	43	56
16	6	16	25	36	42	57
17	7	13	24	37	41	58
18	8	14	23	38	50	59
19	9	11	22	39	49	60
20	10	12	21	40	48	51
21	1	16	29	34	46	52
22	2	17	28	35	47	53
23	3	18	27	36	44	54
24	4	19	26	37	43	55
25	5	20	25	38	42	56