

Вариант № 12

Задание 1. Решить интегралы

№	Пример	При												
1.1	$\int \frac{a * x * dx}{(b + c * x^2)^k}$	<table><tr><th>a</th><th>b</th><th>c</th><th>k</th></tr><tr><td>2</td><td>22</td><td>-19</td><td>11</td></tr></table>	a	b	c	k	2	22	-19	11				
a	b	c	k											
2	22	-19	11											
1.2	$\int p * (a * x^b + c * x^h) * \ln(x^w) * dx$	<table><tr><th>p</th><th>a</th><th>b</th><th>c</th><th>h</th><th>w</th></tr><tr><td>-1,5</td><td>-3,4</td><td>5</td><td>2,2</td><td>2</td><td>2</td></tr></table>	p	a	b	c	h	w	-1,5	-3,4	5	2,2	2	2
p	a	b	c	h	w									
-1,5	-3,4	5	2,2	2	2									
1.3	$\int \frac{a1 * x + a2}{b3 * x^3 + b2 * x^2 + b1 * x + b0} dx$	<table><tr><th>a1</th><th>a2</th><th>b3</th><th>b2</th><th>b1</th><th>b0</th></tr><tr><td>1</td><td>-17 / 5</td><td>1</td><td>-5</td><td>4</td><td>-20</td></tr></table>	a1	a2	b3	b2	b1	b0	1	-17 / 5	1	-5	4	-20
a1	a2	b3	b2	b1	b0									
1	-17 / 5	1	-5	4	-20									
1.4	$\int \frac{h}{a + \sqrt{b1 * x + b2}} dx$	<table><tr><th>h</th><th>a</th><th>b1</th><th>b2</th></tr><tr><td>2</td><td>12</td><td>13</td><td>43</td></tr></table>	h	a	b1	b2	2	12	13	43				
h	a	b1	b2											
2	12	13	43											
1.5	$\int \frac{h}{w1 * cos^2(x) + w2 * sin^2(x)} dx$	<table><tr><th>h</th><th>w1</th><th>w2</th></tr><tr><td>2</td><td>12</td><td>17</td></tr></table>	h	w1	w2	2	12	17						
h	w1	w2												
2	12	17												

1.6	$\int x * \arcsin(w1 * x) * dx$	<table><tr><td>w1</td></tr><tr><td>16</td></tr></table>	w1	16										
w1														
16														
1.7	$\int_{a1}^{a2} \frac{h}{\sqrt{b0 - b1 * x - b2 * x^2}} dx$	<table><tr><td>a1</td><td>a2</td><td>h</td><td>b0</td><td>b1</td><td>b2</td></tr><tr><td>-5</td><td>9</td><td>1</td><td>32</td><td>4</td><td>1</td></tr></table>	a1	a2	h	b0	b1	b2	-5	9	1	32	4	1
a1	a2	h	b0	b1	b2									
-5	9	1	32	4	1									

Задание 2. Решить дифференциальное уравнение (ДУ)

2.1.

Найти частное решение ДУ: $y' = -2 * y$,
удовлетворяющее начальному условию $y(0) = 13$

2.2.

Решить дифференциальное уравнение при $a = 14$

$$x * y' = 2 * \sqrt{a * x^2 + y^2} + y$$