

## Вариант № 21

### Задание 1. Решить интегралы

№	Пример	При												
1.1	$\int \frac{a * x * dx}{(b + c * x^2)^k}$	<table><tr><td>a</td><td>b</td><td>c</td><td>k</td></tr><tr><td>4</td><td>31</td><td>-10</td><td>12</td></tr></table>	a	b	c	k	4	31	-10	12				
a	b	c	k											
4	31	-10	12											
1.2	$\int p * (a * x^b + c * x^h) * \ln(x^w) * dx$	<table><tr><td>p</td><td>a</td><td>b</td><td>c</td><td>h</td><td>w</td></tr><tr><td>1</td><td>3,5</td><td>4</td><td>4</td><td>1</td><td>5</td></tr></table>	p	a	b	c	h	w	1	3,5	4	4	1	5
p	a	b	c	h	w									
1	3,5	4	4	1	5									
1.3	$\int \frac{a1 * x + a2}{b3 * x^3 + b2 * x^2 + b1 * x + b0} dx$	<table><tr><td>a1</td><td>a2</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>1</td><td>-17 / 5</td><td>1</td><td>-6</td><td>5</td><td>-30</td></tr></table>	a1	a2	b3	b2	b1	b0	1	-17 / 5	1	-6	5	-30
a1	a2	b3	b2	b1	b0									
1	-17 / 5	1	-6	5	-30									
1.4	$\int \frac{h}{a + \sqrt{b1 * x + b2}} dx$	<table><tr><td>h</td><td>a</td><td>b1</td><td>b2</td></tr><tr><td>2</td><td>21</td><td>22</td><td>34</td></tr></table>	h	a	b1	b2	2	21	22	34				
h	a	b1	b2											
2	21	22	34											
1.5	$\int \frac{h}{w1 * cos^2(x) + w2 * sin^2(x)} dx$	<table><tr><td>h</td><td>w1</td><td>w2</td></tr><tr><td>3</td><td>7</td><td>19</td></tr></table>	h	w1	w2	3	7	19						
h	w1	w2												
3	7	19												

1.6	$\int x * \arcsin(w1 * x) * dx$	<table><tr><td>w1</td></tr><tr><td>-6</td></tr></table>	w1	-6										
w1														
-6														
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>-4</td><td>5</td><td>1</td><td>45</td><td>4</td><td>1</td></tr></table>	a1	a2	h	b0	b1	b2	-4	5	1	45	4	1
a1	a2	h	b0	b1	b2									
-4	5	1	45	4	1									

## Задание 2. Решить дифференциальное уравнение (ДУ)

### 2.1.

Найти частное решение ДУ:  $y' = -2 * y$ ,  
удовлетворяющее начальному условию  $y(0) = 22$

### 2.2.

Решить дифференциальное уравнение при  $a = 23$

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