

Variant 1.

The General solution of which of the differential equations

$$ydy = xdx$$

$$y' = 2x$$

$$y' = x$$

$$y' = 1$$

is the function:

$$y = x^2 + C$$

Find a partial solution of the differential equation

$$(1+x^2)y' - 2x \cdot y = 0, \text{ boundary condition: } y_0=5, x_0=-2$$

Variant 2.

The General solution of which of the differential equations

$$ydy = xdx$$

$$y' = x$$

$$y' = 1$$

is the function:

$$y = \sqrt{x^2 + C}$$

Find a partial solution of the differential equation

$$y' - 4x \cdot y = 0, \text{ boundary condition: } y_0=3/4, x_0=0$$

Variant 3.

The General solution of which of the differential equations

$$ydy = xdx$$

$$y' = x$$

$$y' = 1$$

is the function:

$$y = \sqrt{x^2 + 3}$$

Find a partial solution of the differential equation

$$y' = 1+x^2, \text{ boundary condition: } y_0=2, x_0=0$$

Variant 4.

The General solution of which of the differential equations

$$ydy = xdx$$

$$y' = x$$

$$y' = 1$$

is the function:

$$y = x + C$$

Find a partial solution of the differential equation

$$x \cdot y' = 3y, \text{ boundary condition: } y_0 = e, x_0 = 1$$

Variant 5.

The General solution of which of the differential equations

$$ydy = xdx$$

$$y' = x$$

$$y' = 1$$

is the function:

$$y = \frac{x^2}{2} + C$$

Find a partial solution of the differential equation

$$xy' + 2y = 1, \text{ boundary condition: } y_0 = 1, x_0 = 3$$

Variant 6.

The General solution of which of the differential equations

$$ydy = xdx$$

$$y' = 2x$$

$$y' = x$$

$$y' = 1$$

is the function:

$$y = x^2 + C$$

Find a partial solution of the differential equation $y' - (\sin x) \cdot y = 0$, boundary condition: $y_0 = 3, x_0 = \pi/2$

Variant 7.

The General solution of which of the differential equations

$$ydy = xdx$$

$$y' = x$$

$$y' = 1$$

is the function:

$$y = \sqrt{x^2 + C}$$

Find a partial solution of the differential equation $y' \cos x - 2y = 2$, boundary condition: $y_0 = 0, x_0 = 0$

Variant 8.

The General solution of which of the differential equations

$$ydy = xdx$$

$$y' = x$$

$$y' = 1$$

is the function:

$$y = \sqrt{x^2 + 3}$$

Find a partial solution of the differential equation $y' = 2x/(1+x^2)$, boundary condition: $y_0 = 0, x_0 = 1$

Variant 9.

The General solution of which of the differential equations

$$ydy = xdx$$

$$y' = x$$

$$y' = 1$$

is the function:

$$y = x + C$$

Find a partial solution of the differential equation

$y' + \sin x \cdot y = 0$, boundary condition: $y_0=2, x_0=0$

Variant 10.

The General solution of which of the differential equations

$$ydy = xdx$$

$$y' = x$$

$$y' = 1$$

is the function:

$$y = \frac{x^2}{2} + C$$

Find a partial solution of the differential equation

$y' = 1+x^2$, boundary condition: $y_0=2, x_0=0$

Variant 11.

The General solution of which of the differential equations

$$ydy = xdx$$

$$y' = x$$

$$y' = 1$$

is the function:

$$y = x^2 + C$$

Find a partial solution of the differential equation

$y' - 2x \cdot y = 0$, boundary condition: $y_0=3, x_0=0$

Variant 12.

The General solution of which of the differential equations

$$ydy = xdx$$

$$y' = x$$

$$y' = 1$$

is the function:

$$y = \sqrt{x^2 + C}$$

Find a partial solution of the differential equation
 $(1+x^2)y'=0$, boundary condition: $y_0=5, x_0=-2$

Variante 13.

The General solution of which of the differential equations

$$ydy = xdx$$

$$y' = x$$

$$y' = 1$$

is the function:

$$y = \frac{x^2}{2} + C$$

Find a partial solution of the differential equation
 $y'+2x \cdot y=0$, boundary condition: $y_0=5, x_0=0$