Channel export

Find the displacement of an object between the fourth and sixth second from it's start, if the velocity of the object at time, t is

$$v = \frac{t^2 + 1}{\left(t^3 + 3\,t\right)^2}$$

After calculating the displacement, export its value through the channel.

Solution:

We can calculate the displacement if we evaluate

$$v := \left(t^2 + 1\right) / \left(t^3 + 3\,t\right)^2$$

$$x := \int_4^6 g\ v\ dt$$

$$x = 0.003$$

The displacement of the object from time, t = 4 to t = 6 is 0.00296. Now, we will export this value through channel.

Export the Channel object through which we have exported the variable, x

Channel import

Find the average value of ***$y(3y^2-1)^3$*** *in the interval which's lower boundary is the value that we are going to import from the channel and the upper boundary is 1.2.*

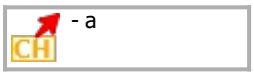
Solution*:*

The average value of a function ,f(x) , in the region [a, b] is given by:

$$\text{Average} = \frac{\int_a^b f(x)\,dx}{b-a}$$

Let's first import the value from the channel to the lower boundary.

$a := 0$



Import the Channel object from which we have imported the value to variable, a

$a = 0.003$ $b := 1.2$

$$v1 := y\left(3\,y^2 - 1\right)^3$$

$$\text{Average} := \left(\int_a^b v1\,dy\right)/(b-a)$$

$\text{Average} = 4.194$

So the average value of the function is 4.194.