Example: *database export*

The electric power represented by the letter, P, is delivered by the battery as a function of the resistance. R is:

$$P := \frac{100\,R}{(0.5+R)^2}$$

dependence on electric power of resistance

Find the maximum power of P within in the range of $0 \le R \le 20$ and export the dependence data so we can use them later on.

Solution:

We have the dependence function, now we will calculate the first derivative of the function and use it to find it's maximum.

$a := \frac{d}{dR} P$ ← We created variable a as a container for the derivative of the function

maxPower := nonlinsolve(a == 0 , R) ← Null of the first derivative is the extremum point

maxPower = 0.5 ← Variable maxPower contains the maximal power of P

$P := \text{curve2d}\left(\frac{100\,R}{(0.5+R)^2}, R, 0, 20, 200\right)$ ← Dependence data which is to exported

database write("export example.db" , "exam" , P)

↑ Exporting the data to the database

Example: *database import*

The electric power, P, which is delivered by the battery as a function of the resistance, R, is:

$$P := \frac{100\,R}{(0.5+R)^2}$$

dependence on electric power of resistance

Plot the power as a function of the resistance using the data saved in database file.

Solution:
The Graph confirms the calculations that we performed in the Database export.mdd file.

$a := 0$ ← Define the variable

$\text{database tables}("\text{export example.db}") = \begin{bmatrix} "P" \\ "exam" \end{bmatrix}$ ← Display the database tables

$a := \text{database read}("\text{export example.db}", "exam")$ ← Import data from the database into the variable, a

$a = 200 \times 2$ elements matrix ← Value after the data import