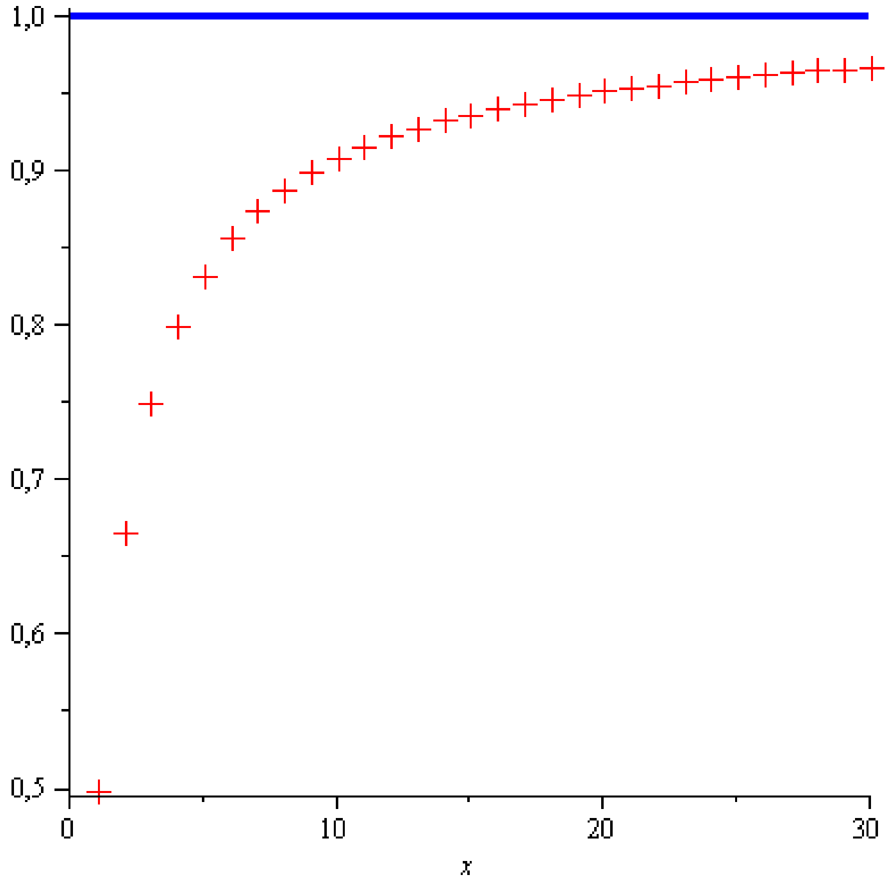
with(*plots*) :

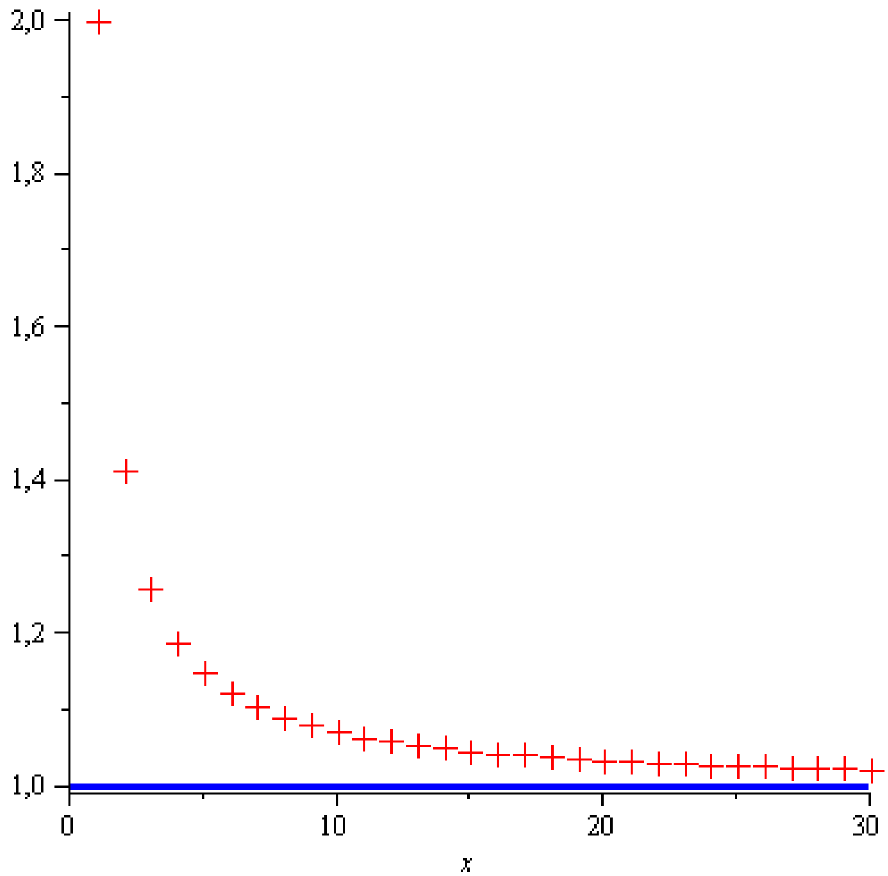
Příklad 6

multiple(*plot*, [{*seq*([*n*, *n*/(*n* + 1)], *n* = 1 ..30)}, *x* = 0 ..20, *style* = *point*, *symbol* = *cross*, *symbolsize* = 20], [1, *x* = 0 ..30, *color* = *blue*, *thickness* = 3]);



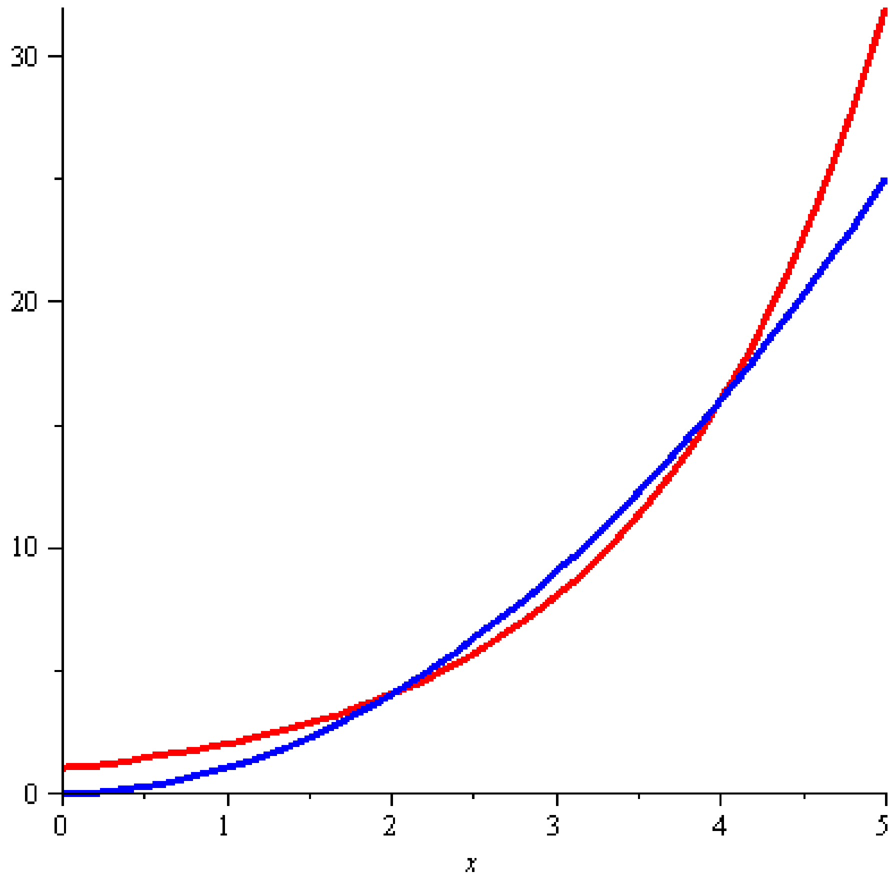
Příklad 7

multiple(*plot*, [{*seq*([*n*, *root*[*n*](2)], *n* = 1 ..30)}, *x* = 0 ..20, *style* = *point*, *symbol* = *cross*, *symbolsize* = 20], [1, *x* = 0 ..30, *color* = *blue*, *thickness* = 3]);



Příklad 8

multiple(*plot*, [2^*x*, *x* = 0 ..5, *color* = *red*, *thickness* = 3], [*x*^2, *x* = 0 ..5, *color* = *blue*, *thickness* = 3]);



Příklad 11

$F := \left(\frac{\ln(2 \cdot x^3 + 4 \cdot x^2 - x)}{(x+1)} \right):$

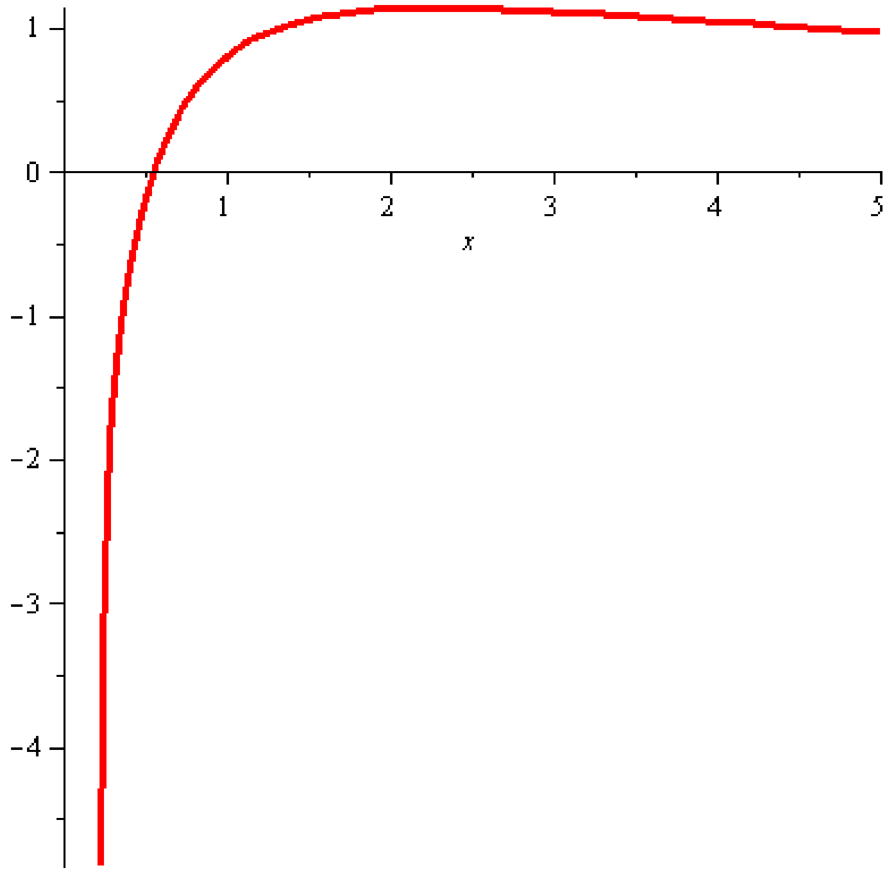
$F1 := diff(F, x);$

$$\frac{6x^2 + 8x - 1}{(2x^3 + 4x^2 - x)(x+1)} - \frac{\ln(2x^3 + 4x^2 - x)}{(x+1)^2}$$

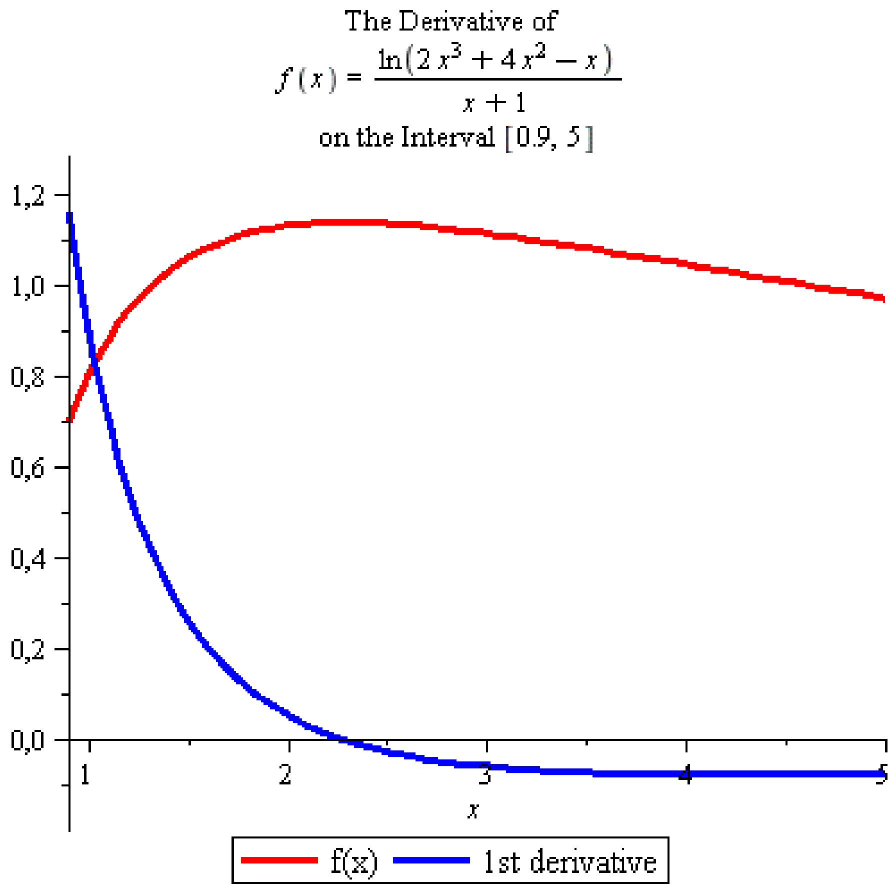
$F2 := diff(F, x\$2);$

$$\frac{12x + 8}{(2x^3 + 4x^2 - x)(x+1)} - \frac{(6x^2 + 8x - 1)^2}{(2x^3 + 4x^2 - x)^2 (x+1)} - \frac{2(6x^2 + 8x - 1)}{(2x^3 + 4x^2 - x)(x+1)^2} + \frac{2\ln(2x^3 + 4x^2 - x)}{(x+1)^3}$$

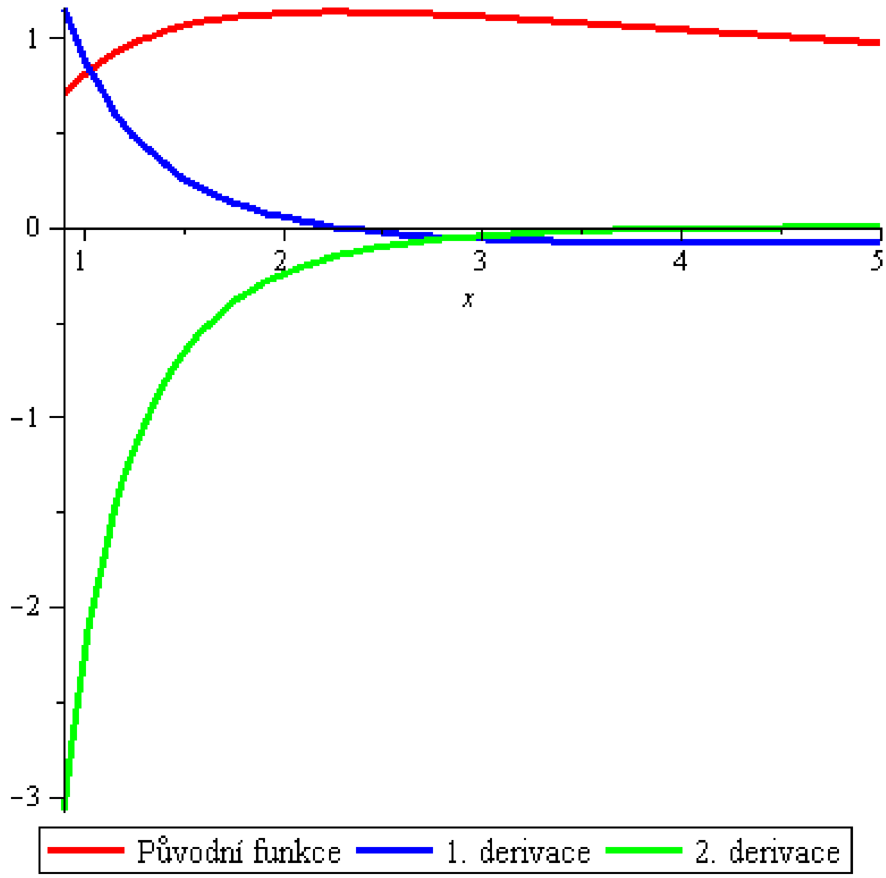
$plot(F, x = 0..5, thickness = 3);$



$with(Student[Calculus1]):$
$DerivativePlot(F, x = 0.9..5, thickness = 3);$



$plot([F, F1, F2], x = 0.9..5, thickness = 3, color = [red, blue, green],$
$legend = [$"Původní funkce","1. derivace", "2. derivace"$]);$



F[1] := *eval*(*F*, *x* = 1);

$$\frac{1}{2}\ln(5)$$

F1[1] := *eval*(*F1*, *x* = 1);

$$\frac{13}{10}-\frac{1}{4}\ln(5)$$

F2[1] := *eval*(*F2*, *x* = 1);

$$-\frac{67}{25}+\frac{1}{4}\ln(5)$$

evalf(*F*[1]);

0.804718956(

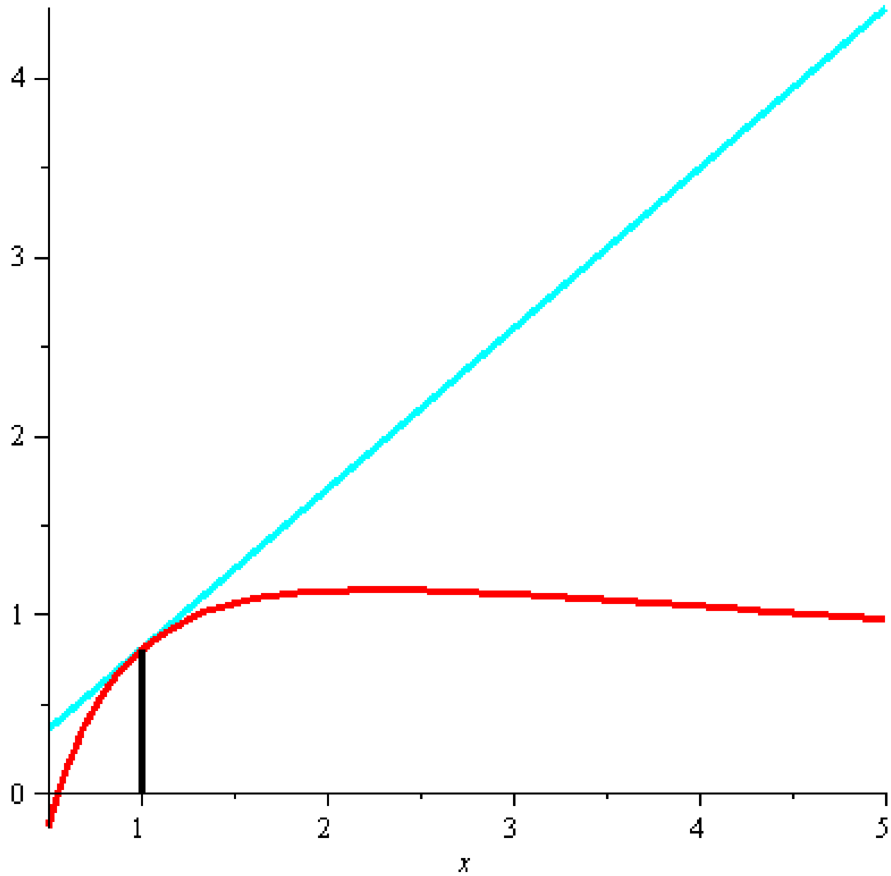
evalf(*F1*[1]);

0.897640522(

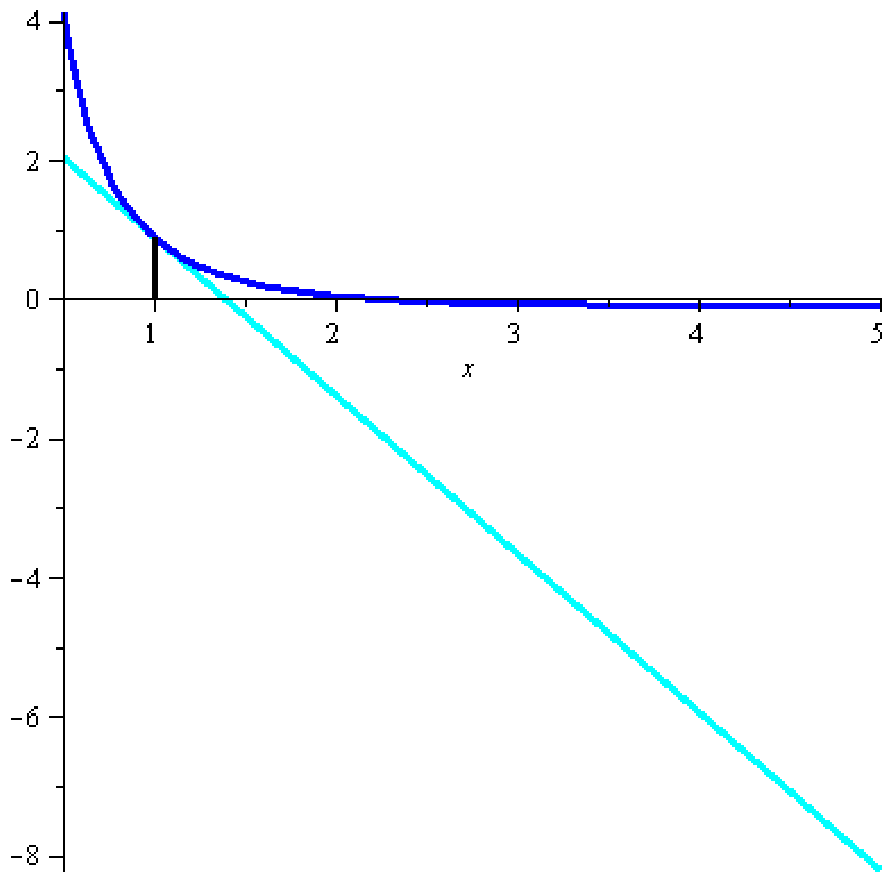
evalf(*F2*[1]);

−2.27764052:

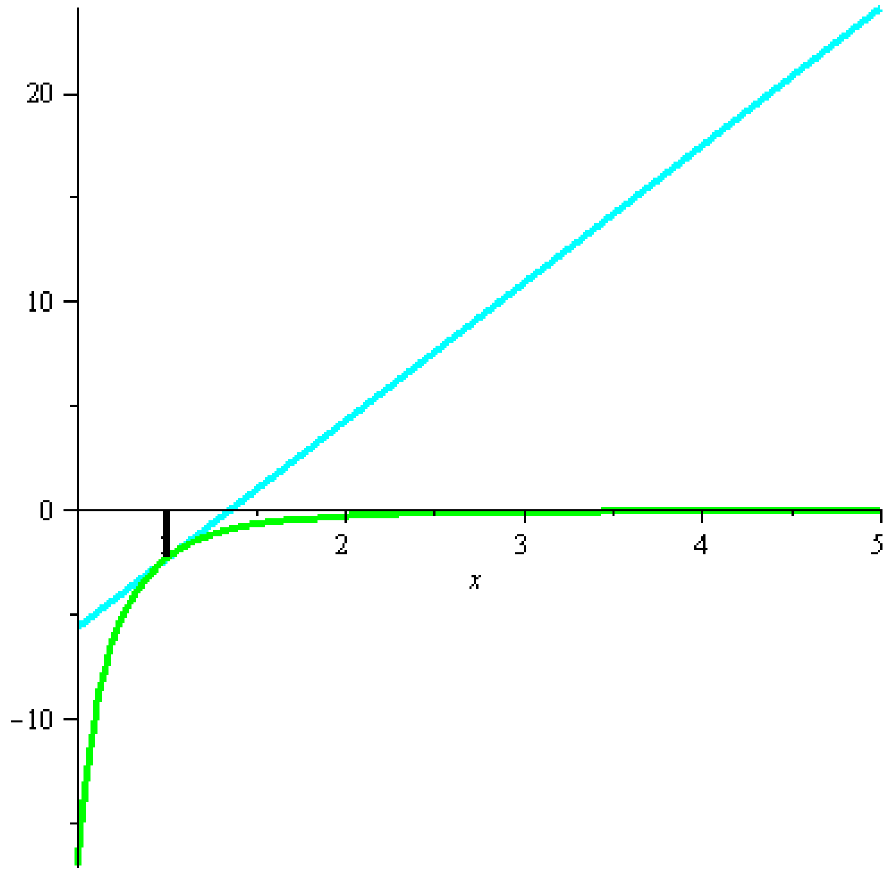
with(*student*) :
showtangent(*F*, *x* = 1, *x* = 0.5 ..5, *thickness* = 3, *color* = [*cyan*, *red*]);



showtangent (*F1*, *x* = 1, *x* = 0.5 ..5, *thickness* = 3, *color* = [*cyan*, *blue*]);



showtangent (*F2*, *x* = 1, *x* = 0.5 ..5, *thickness* = 3, *color* = [*cyan*, *green*]);



20
10
0
-10
2
3
4
5
x