$$F1(x,m) := \int_x^1 \sqrt{(t^2 - x^2)\cdot(t^2 - m^2)}\cdot\frac{1}{t}\,dt$$

$$FF1(x,m) := \frac{F1(x,m)}{1 - m^2 - m^2 \cdot \ln\left(\frac{1}{m}\right)}$$

$$FF1(x,m) := \frac{F1(x,m)}{\frac{1-m^2}{2} - m^2\cdot\ln\left(\frac{1}{m}\right)}$$

Normalized function

$$x1(x,m) := \frac{x-m}{1-m}$$

How do we find a closed-form function, say G1(x1), drived from FF1(x,m)?

We have x1 as:

$x := 0, 0.001 .. 1$ $\quad m := 0.7$

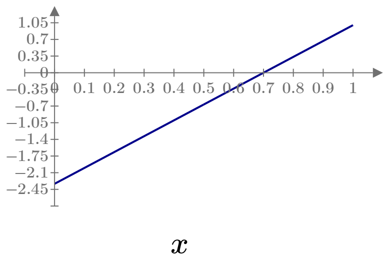
$$x1 := \frac{x-m}{1-m}$$

Do we have to write x1 as a function? like:

$$x1(x,m) := \frac{x-m}{1-m}$$

Finally, I would like to compare FF1 and G1 against x1 in plotts.

$x := 0, 0.001 .. 1$ $\quad m := 0.7$

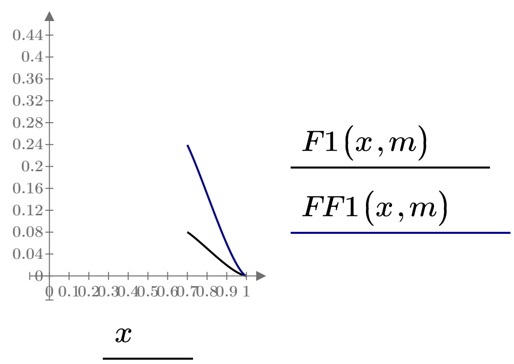


$$x1 = \frac{x-m}{1-m}$$ $$x = x1\cdot(1-m)+m$$ $$X(x1) := x1\cdot(1-m)+m$$

$$F1(0.1, m) = 0.137 + 0.283i$$

$$FF1(0.1, m) = 0.408 + 0.843i$$

Plots don't show in range where result is imaginary, use Re() and Im() to see real and imaginary parts



$$G1(x1) := FF1(X(x1), m)$$