Solution to Homework 4
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$[[fn\ f\ =>\ fn\ x\ =>\ if\ x\ >\ 0\ then\ f\ x\ else\ f\ ((-1)*x)]](FUN\ w\ \rightarrow\ report\ w)$

First we will break the conditional evaluations into CPS style and then apply the if then statement.

The Else condition

$(FUN\ w\ \rightarrow\ report\ w)(FN\ f\ k_1\ \rightarrow\ (FN\ x\ k_2\ \rightarrow\ ((FUN\ y\ \rightarrow\ ((FUN\ z\ \rightarrow\ k_1\ y\ (k_2\ z*x))-1))f)))$

The If conditon

$(FUN\ w\ \rightarrow\ report\ w)(FN\ f\ k_1\ \rightarrow\ (FN\ x\ k_2\ \rightarrow\ ((FUNy\ \rightarrow\ k_1\ y(k_2\ x))f)))$

Putting the two together around the if else conditonals...

$(FUN\ w\ \rightarrow\ report\ w)\ (FN\ f\ k_1\ \rightarrow\ (FN\ x\ k_2\ \rightarrow\ (FUN\ y\ \rightarrow\ IF\ k_1\ y\ THEN\ ((FUN\ w\ \rightarrow\ k_1\ w(k_2\ x))f)\ ELSE\ ((FUN\ z\ \rightarrow\ ((FUN\ q\ k_1\ z(k_2\ q*x))-1))f)(x>0)))$