Floor (integer part) taking an expression evaluating to a c.f. and yielding an integer.

expr ← *ip* {*expr*: *expr*}

$$\lfloor \boxed{expr} \rfloor \;\to\; \textbf{match}\ \boxed{expr}\quad n+\frac{1}{d} \to n \quad \textbf{else} \to \textbf{fail}$$

Fraction part taking an expression evaluating to a c.f. and yielding a c.f.

expr ← *fp* {*expr′*: *expr*}

$$\left\{ \boxed{expr'} \right\} \;\to\; \textbf{match}\ \boxed{expr'}\quad n'+\frac{1}{d'} \to 0+\frac{1}{d'} \quad \textbf{else} \to \textbf{fail}$$

Reciprocal for continued fraction values

expr ← *recip* {*expr″*: *expr*}

$$\boxed{expr''}\ \boxed{-}^{\text{sym}}\ 1^{\text{juxt}} \;\to\; \textbf{match}\ c\quad 0+\frac{1}{d''} \to d'' \quad \textbf{else} \to 0+\frac{1}{c} \quad \textbf{where}\quad c = \boxed{expr''}$$

Add an integer (on the left) to a continued fraction

expr ← *plus* {*int*: *expr*, *cf*: *expr*}

$$\boxed{int}\ \boxed{+}^{\text{sym}}\ \boxed{cf}^{\text{rel}} \;\to\; \textbf{match}\ \boxed{cf}\quad n''+\frac{1}{d'''} \to \left(\boxed{int}+n''\right)+\frac{1}{d'''} \quad \textbf{else} \to \textbf{fail}$$

expr ← *negate-2* {*expr‴*: *expr*}

$$\boxed{-}^{\text{sym}}\ \boxed{expr'''}^{\text{juxt}} \;\to\; \textbf{match}\ c'$$

$$n'''+\circ \to -n'''+\circ$$

$$\textbf{else} \to \textbf{match}\ c'$$

$$n''''+\frac{1}{2+\circ} \to \left(-n''''-1\right)+\frac{1}{2+\circ}$$

$$\textbf{else} \to \textbf{match}\ c'$$

$$n'''''+\frac{1}{1+\frac{1}{l+\frac{1}{d''''}}} \to \left(-n'''''-1\right)+\frac{1}{(l+1)+\frac{1}{d''''}}$$

$$\textbf{else} \to \textbf{match}\ c'$$

$$n''''''+\frac{1}{m+\frac{1}{d'''''}} \to \left(-n''''''-1\right)+\frac{1}{1+\frac{1}{(m-1)+\frac{1}{d'''''}}}$$

$$\textbf{else} \to \textbf{fail}$$

$$\textbf{where}\quad c' = \boxed{expr'''}$$