

$ANS ::= Yes \mid No$   
 $COIN == \{1, 2, 5, 10, 20, 50\}$

I'm cheating and making a 'bag' really just a sequence.  
 Lets hope I can get away with it. Below the concatenation operator intended  
 to mean bag union

$$\begin{array}{|l}
 \hline
 sum : bag\ COIN \rightarrow \mathbb{N} \\
 \hline
 \forall p : COIN \bullet sum \langle p \rangle = p \\
 \forall b, c : bag\ COIN \bullet sum(b \frown c) = sum\ b + sum\ c
 \end{array}$$

$Purse == [coin : bag\ COIN]$   
 $PurseInit == [Purse' \mid coin' = \langle \rangle]$