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EXTENDS Integers
VARIABLES big, small
Init  $\triangleq$   $\wedge big = 0$ 
            $\wedge small = 0$ 
TypeOK  $\triangleq$   $\wedge big \in 0 \dots 5$ 
            $\wedge small \in 0 \dots 3$ 
            $\wedge \neg(big = 4)$ 

EmptyBig  $\triangleq$   $\wedge big' = 0$ 
            $\wedge small' = small$ 
EmptySmall  $\triangleq$   $\wedge small' = 0$ 
            $\wedge big' = big$ 
FillBig  $\triangleq$   $\wedge big' = 5$ 
            $\wedge small' = small$ 
FillSmall  $\triangleq$   $\wedge small' = 3$ 
            $\wedge big' = big$ 
Min(m, n)  $\triangleq$  IF m < n THEN m ELSE n
BigToSmall  $\triangleq$ 
    LET poured  $\triangleq$  Min(big + small, 3) - small
    IN   $\wedge big' = big - poured$ 
        $\wedge small' = small + poured$ 
SmallToBig  $\triangleq$ 
    LET poured  $\triangleq$  Min(big + small, 5) - big
    IN   $\wedge small' = small - poured$ 
        $\wedge big' = big + poured$ 
Next  $\triangleq$   $\vee$  EmptyBig
            $\vee$  EmptySmall
            $\vee$  FillBig
            $\vee$  FillSmall
            $\vee$  BigToSmall
            $\vee$  SmallToBig

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\ * Modification History
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