

w-pred^{11,40}

```
w-pred( $w;e$ )  
≡def if(time( $e$ ) =0 0)  
      then inr .  
      ifisnull(a(loc( $e$ );time( $e$ ) - 1))  
        then w-pred( $w$ ; <loc( $e$ ), time( $e$ ) - 1>)  
        else inl <loc( $e$ ), time( $e$ ) - 1>  
      fi
```

clarification:

```
w-pred( $w;e$ )  
≡def if(w-time( $w; e$ ) =0 0)  
      then inr .  
      ifw-isnull( $w$ ; w-a( $w$ ; w-loc( $w; e$ ); (w-time( $w; e$ ) - 1)))  
        then w-pred( $w$ ; <w-loc( $w; e$ ), w-time( $w; e$ ) - 1>)  
        else inl <w-loc( $w; e$ ), w-time( $w; e$ ) - 1>  
      fi
```

(recursive)