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; A program in SDC machine language that divides the number X
    ; in location 50 by 10, leaving the quotient in R1
    ; and the remainder in R0. (Assume X ≥ 0.)

; Since we can only test a register for > 0, we need while R0 − 9 ≥ 1. Rather than
    ; constantly subtracting and adding 9, let's just subtract 9 once before the loop
    ; begins and add it back after the loop ends:

    ; ** Pseudocode **

    ; R0 = X
    ; R0 = R0 − 9
    ; R1 = 0
    ; while R0 >= 1
    ; R0 = R0 − 10
    ; R1 = R1 + 1
    ; R0 = R0 + 9
    ; HALT


    1050 ; R0 ← M[50]
    1201 ; R2 ← M[01] => 9
    1301 ; R3 ← M[01] => 10
    4200 ; R2 ← −R2 => −9
    4300 ; R3 ← −R3 => −10
    2201 ; M[01] ← R2 = > −9
    2301 ; M[01] ← R3
    3000 ; R[0] ← R[0] + M[00] => 1
    1102 ; R[1] ← M[02] => 0
    3001 ; R[0] ← R[0] + M[01] = 3
    3104 ; R1 ← R1 + M[04] => 1
    3001 ; R[0] ← R0 + M[01] = 21
    3104 ; R1 ← R1 + M[04] => 2
    3001 ; R[0] ← R0 + M[01] => 11
    3104 ; R[1] ← R1 + M[04] =>3
    3001 ; R0 ← R0 + M[01] => 1
    3104 ; R1 ← R1 + M[04] => 4
    3001 ; R0 ← R0 + M[01] => −9
    3104 ; R1 ← R1 + M[04] => 5
    1501 ; R5 ← M[01] => 9
    3001 ; R0 ← R0 + M[01] => R0+9 = 0
```