2010 Question 3: Trail (9 points)

Total Scored out of 9	

Part A: `isLevelTrailSegment` **(5 points)**

Intent: Return `true` if maximum difference <= 10 (segment is level); `false` otherwise

+1/2 Creates and maintains local state for determination of maximum (or minimum)

+1/2 Accesses the value of any element of `markers`

+1 All and only appropriate elements of `markers` participate in determination of information needed to test level-trail condition; no out-of-bounds access potential

+1 Compares element to state in context of updating maximum (or minimum);

+1 Correctly determines information needed to test level-trail condition for the elements examined; must address two or more pairs of elements

+1 Returns `true` if determined maximum difference is <= 10, `false` otherwise

Part B: `isDifficult` **(4 points)**

Intent: Return `true` if trail is difficult (based on number of changes of given magnitude); `false` otherwise

+1/2 Creates, initializes and accumulates a count of number of changes

+1/2 Accesses the value of any element of `markers` in context of iteration

+1/2 Accesses the value of all elements of `markers`, no out-of-bounds access potential

+1/2 Computes difference of all and only consecutive values in `markers`

+1 Updates accumulated count if and only if absolute value of difference is >= 30

+1 Returns `true` if accumulated count is >= 3; `false` otherwise