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1: function LINEARPARTITION( $\mathbf{x}$ )
2:    $n \leftarrow$  length of  $\mathbf{x}$ 
3:    $Q \leftarrow$  hash()  $\triangleright$  hash table: from key  $(i, j)$  to score
4:    $Q(0, 1) \leftarrow 1$   $\triangleright$  axiom
5:   for  $j = 1, \dots, n$  do
6:      $Q(j, j + 1) \leftarrow 1$   $\triangleright$  PUSH
7:     for each key  $(i, j)$  in  $Q$  do
8:        $Q(i, j + 1) \leftarrow Q(i, j) \cdot e^{-\frac{\delta(\mathbf{x}, j)}{kT}}$   $\triangleright$  SKIP
9:       if  $(x_i, x_j)$  in {AU, UA, CG, GC, GU, UG} then
10:        for each key  $(k, i)$  in  $Q$  do
11:           $Q(k, j + 1) += Q(k, i) \cdot Q(i, j) \cdot e^{-\frac{\xi(\mathbf{x}, i, j)}{kT}}$   $\triangleright$  POP
12:        BEAMPRUNE( $Q, j + 1, \text{beamsize}$ )
13:   return  $Q(0, n + 1)$ 

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