

(b)

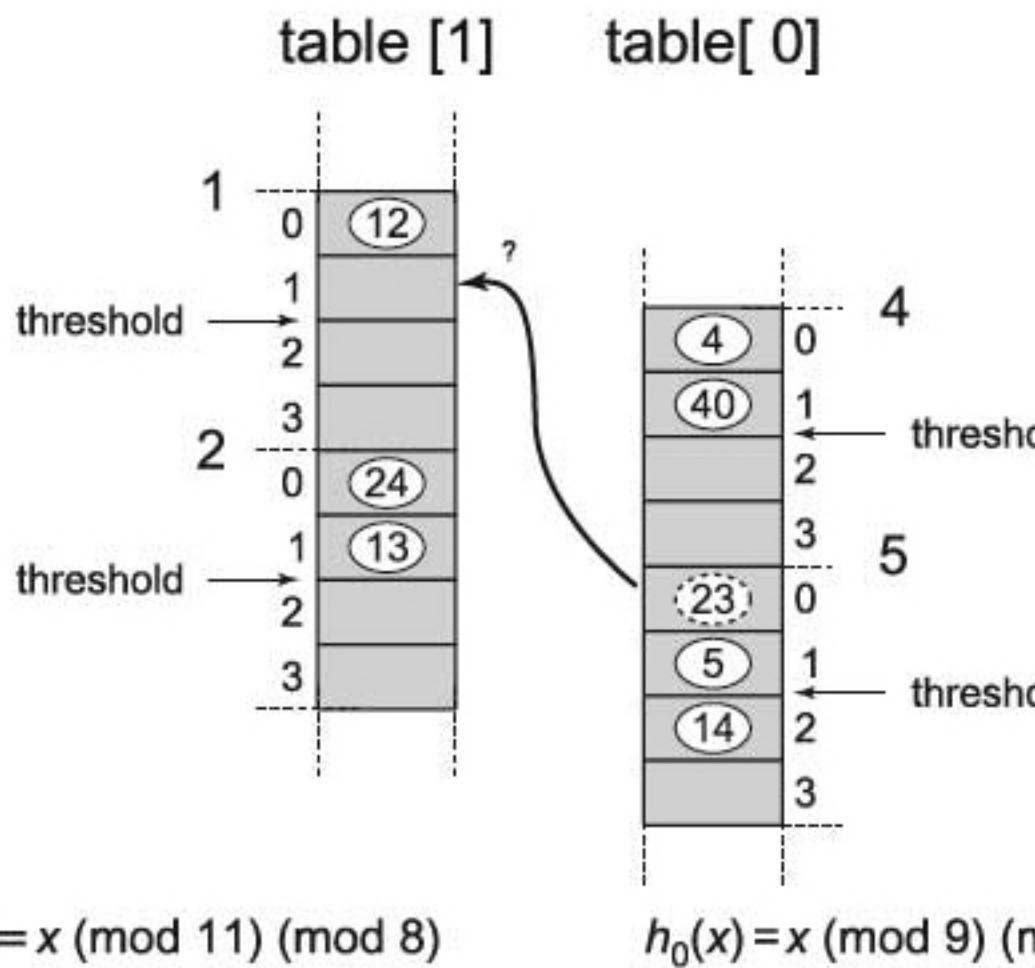


FIGURE 13.23B The PhasedCuckooHashSet<T> class: add() and relocate() methods. The figure shows the array segments consisting of eight probe sets of size 4 each, with a threshold of 2. Shown are probe sets 4 and 5 of Table[0][] and 1 and 2 of Table[1][]. In part (a), an item with key 13 finds Table[0][4] above threshold and Table[1][2] below threshold, so it adds the item to the probe set Table[1][2]. The item with key 14, on the other hand, finds that both of its probe sets are above threshold, so it adds its item to Table[0][5] and signals that the item should be relocated. In part (b), the method tries to relocate the item with key 23, the oldest item in Table[0][5]. Since Table[1][1] is below threshold, the item is successfully relocated. If Table[1][1] were above threshold, the algorithm would attempt to relocate item 12 from Table[1][1], and if Table[1][1] were at the probe set's size limit of four items, it would attempt to relocate the item with key 5, the next oldest item, from Table[0][5].