Binary Search – solutions

Task . Binary search algorithm

The steps for performing a binary search are written out below but they have been mixed up. Some of the instructions are also incomplete.

Number the steps from 1-8 so that the instructions are in the correct sequence and fill in the missing information.

| **Step number** | **Instruction** |
| --- | --- |
| 3 | Repeat steps 4-8 until you find the item you are searching for or there are no more items to check (the range is empty). |
| 6 | If the midpoint item is **equal to** the search item, then stop searching . |
| 2 | Maintain a **range** of items where the search item might be found. Initially, set the range to be the entire list . |
| 4 | Find the item in the middle of the range (the midpoint item). |
| 7 | Otherwise, if the midpoint item is **less than** than the search item, change the range to focus on the items **after** the midpoint. |
| 1 | Take an **ordered** list of data and an item that is being searched for (the search item). |
| 8 | Otherwise, if the midpoint item is **greater than** than the search item, change the range to focus on the items **before** the midpoint. |
| 5 | Compare the midpoint item to the search item . |