Question 1.

(a) i. case 2

ii. 1

(b) i. case 1

ii. 0.1

(c) i. case 3

ii. 0.1

Question 2.

28, 35

Question 3.

Since x = 25, we have:

L = {17, 18, 15, 11, 14}

R = {28, 35, 78, 86, 75, 80, 54, 58, 97}

Because k = 8 is greater than |L| = 5 and not equal to |L| + 1, the else block is executed, calling quickSelect(G, 8 - (|L| + 1))

therefore, the value of k at the first recursive call is 8 - (|L| + 1) = 2.

Question 4.

- Divide the vector into 9 groups of 5 elements

{978 167 103 386 987} {335 448 298 582 215} {842 640 868 943 998}

{384 594 966 724 231} {948 163 578 903 748} {784 598 740 145 595}

{794 928 663 702 220} {556 937 569 659 520} {589 502 966 457 351}

- Find the median of each group

{386} {335} {868} {594} {748} {598} {702} {569} {502}

- Find the median of the medians

{594}

Thus, the first pivot chosen is 594.