Q5) Test Data Point = (37, 142)

(where each data point is represented as (Age, Loan))

* Distance Metric being used is Manhattan Distance

i.e. $d_{ij} = |d_{i_{Age}} - d_{j_{Age}}| + |d_{i_{Loan}} - d_{j_{Loan}}|$

where d_{ij} → distance b/w d_i & d_j

d_i → i^{th} data point

Training Data Pt.	Distance from Test
(25, 40)	114
(35, 60)	84
(45, 80)	70
(20, 20)	139
(35, 120)	24
(52, 18)	139
(23, 95)	61
(40, 62)	83
(60, 100)	65
(48, 220)	89
(33, 150)	12

* HPI and BHK not indicated as they are irrelevant for distance

Ordering these from lowest to greatest w.r.t distance:
(33,150,12), (35,120,24), (23,95,61), (60,100,65), (45,80,70), (40,62,83), (35,60,84), (48,220,89), (25,40,114), (20,20,139), (52,18,139)

where each entry = (Age, Loan, Distance)

For k=1

Only 1st neighbor taken,

HPI = 264

BHK = 4

For k=2

1st & 2nd neighbors taken,

HPI = (264 + 139)/2 = 201.5

BHK = $\underset{i}{\text{argmax}}$ (4,4) = 4

For k=3

1st, 2nd & 3rd neighbors taken,

HPI = (264+139+127)/3 = 176.66

BHK = $\underset{i}{\text{argmax}}$ (4,4,2) = 4