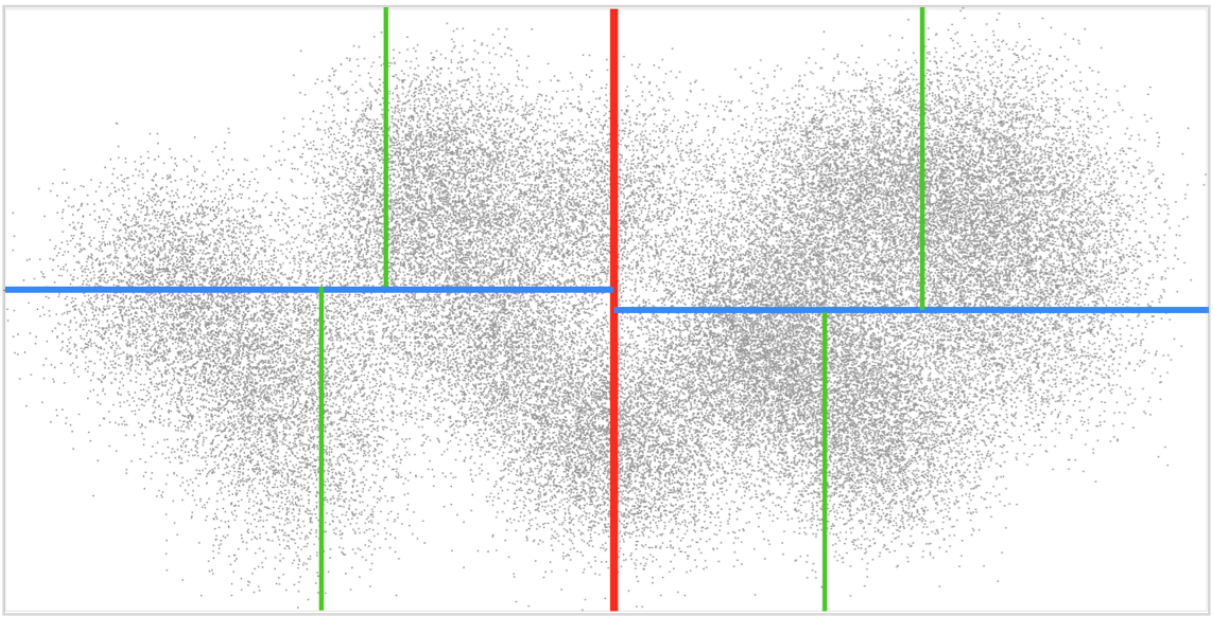
K-D Tree

#utec/CS3102

K-d tree

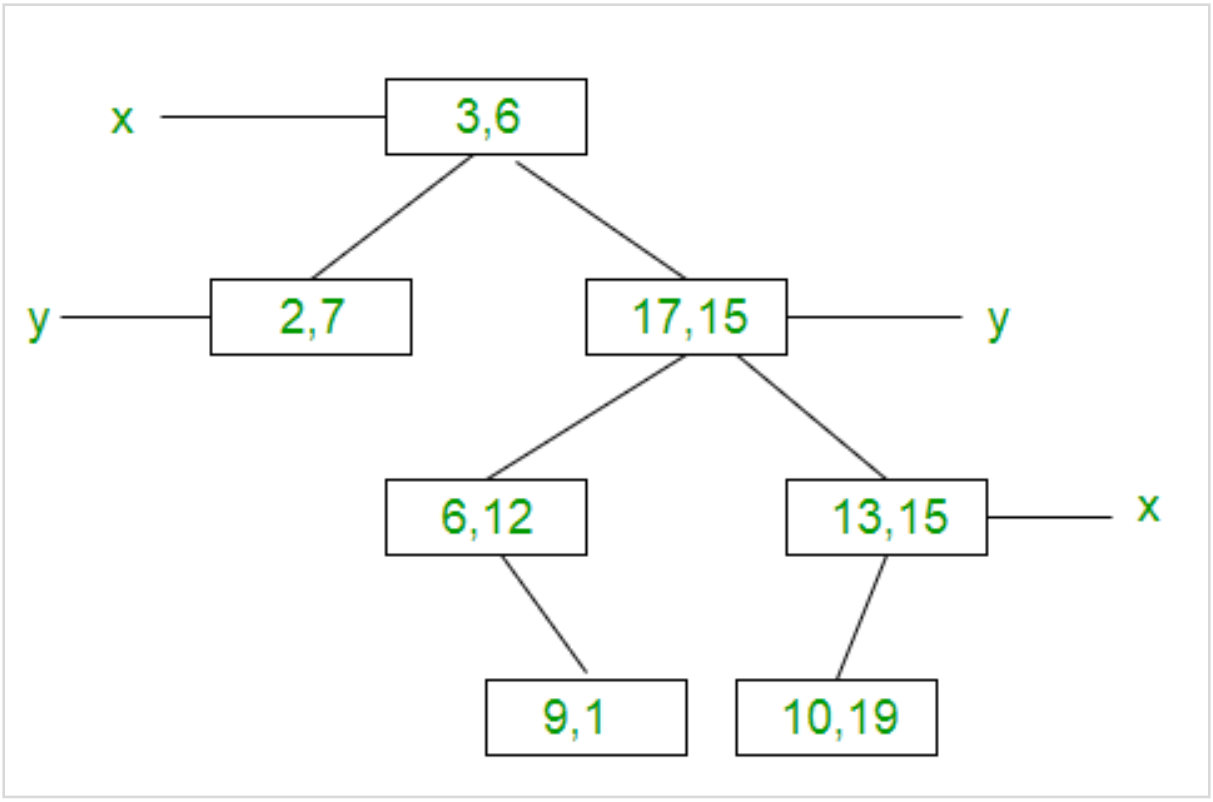
> A K-D Tree(also called as K-Dimensional Tree) is a binary search tree where data in each node is a K-Dimensional point in space.In short, it is a space partitioning data structure for organizing points in a K-Dimensional space.



Compared to R-tree, K-d tree can usually only contain points (not rectangles), and doesn't handle adding and removing points. But it's much easier to implement, and it's very fast.

Both R-tree and K-d tree share the principle of partitioning data into axis-aligned tree nodes. So the search algorithms discussed below are the same for both trees.

Example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13,15
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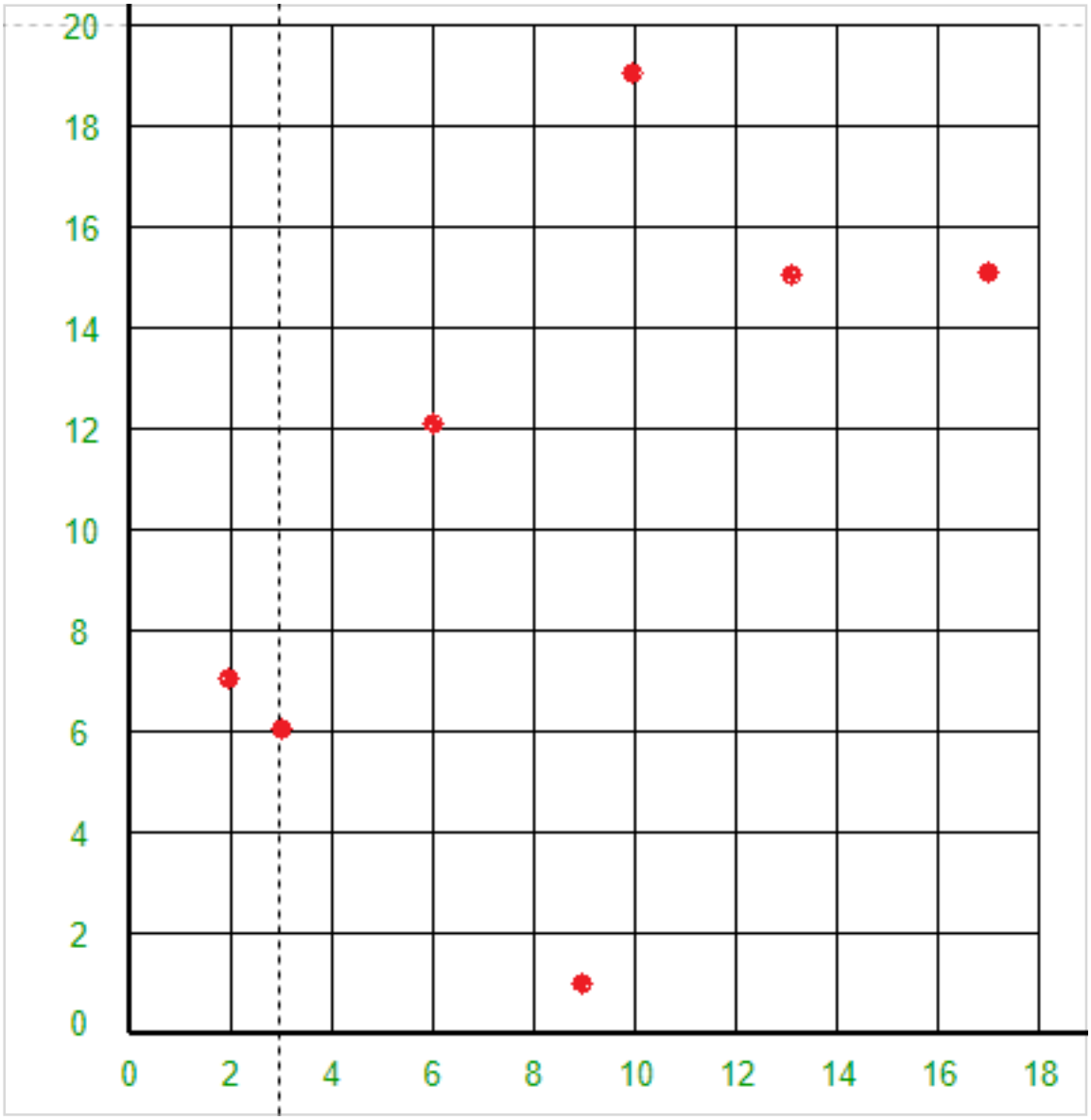
10,19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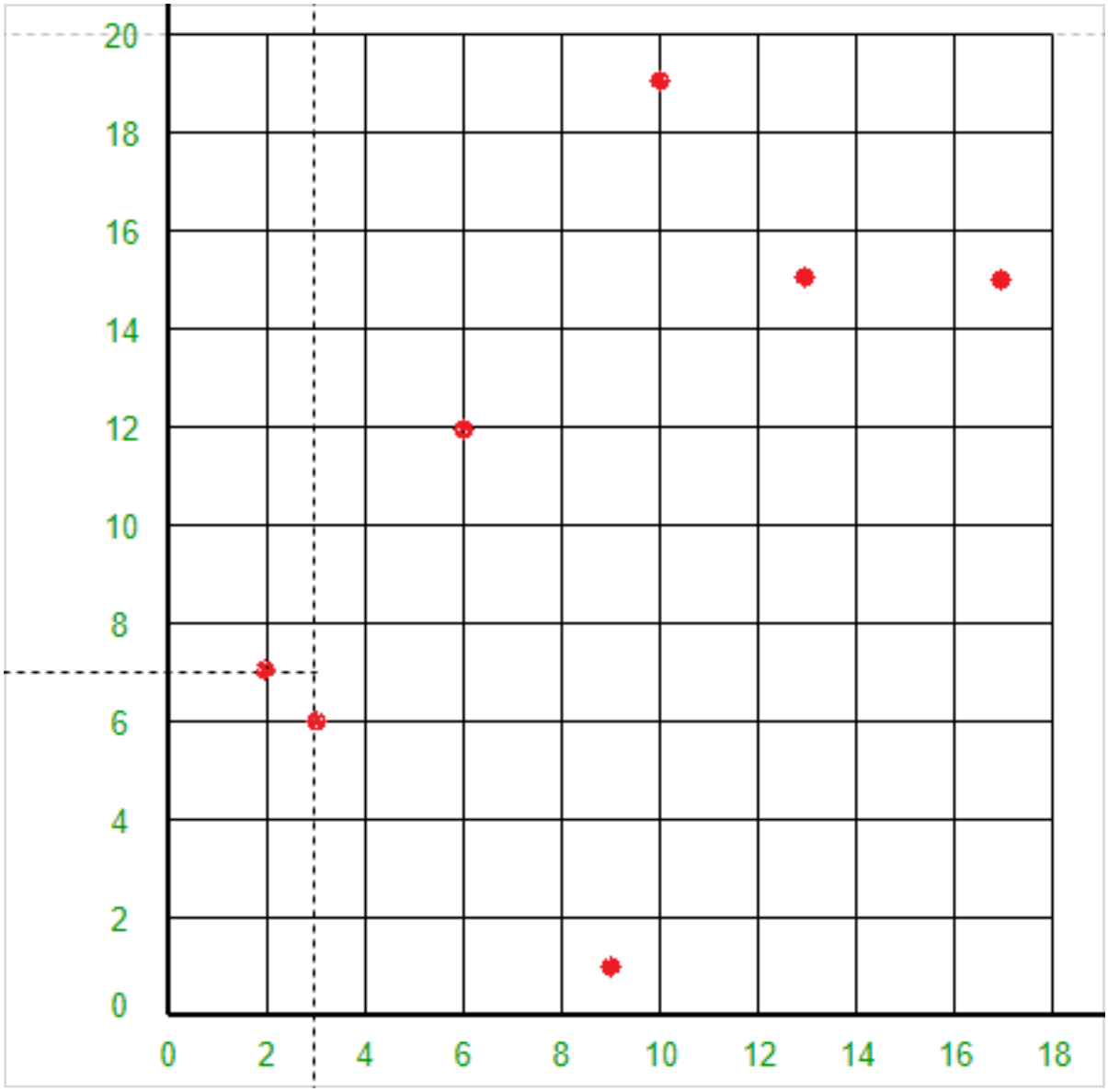
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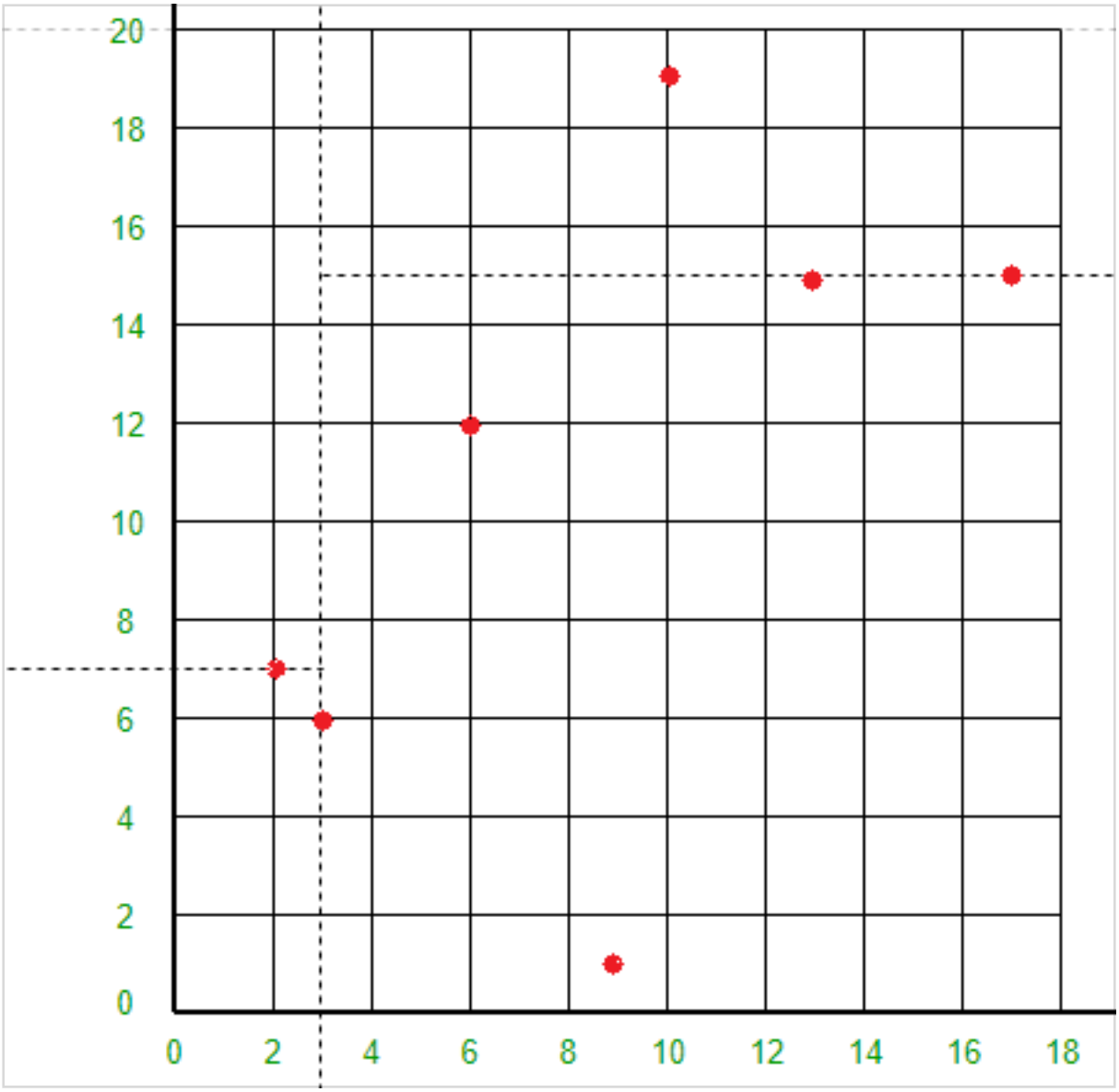
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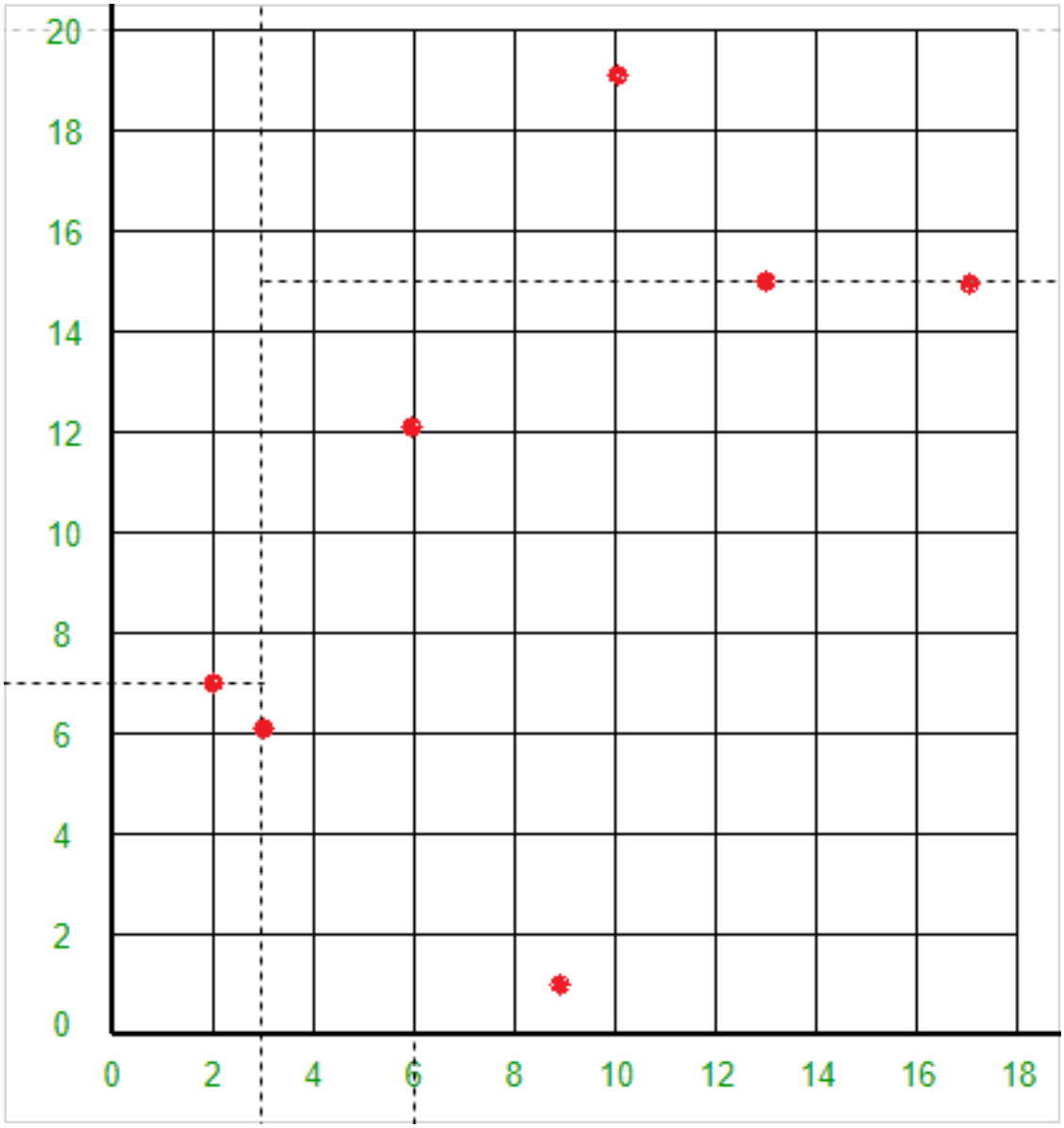
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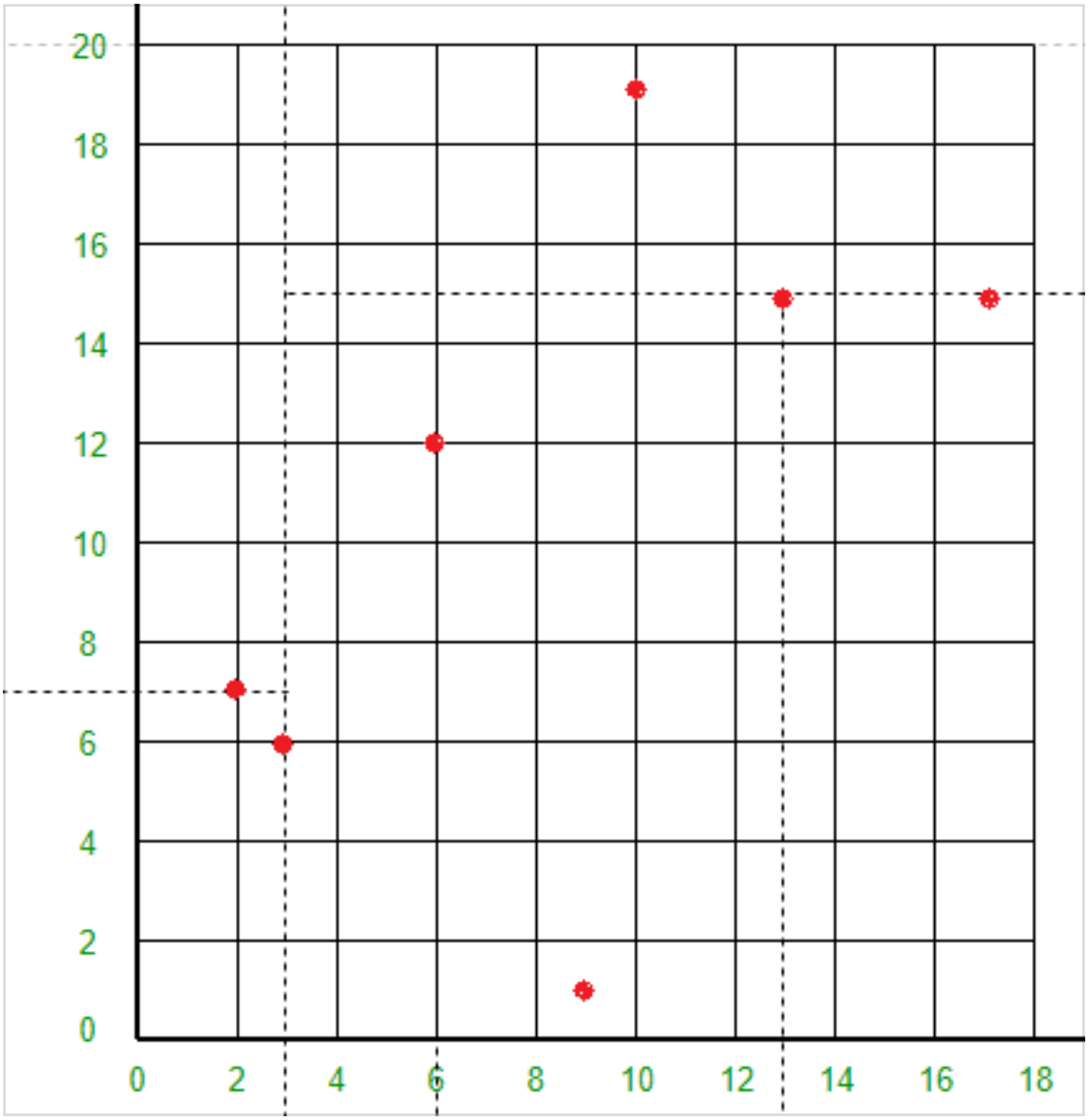
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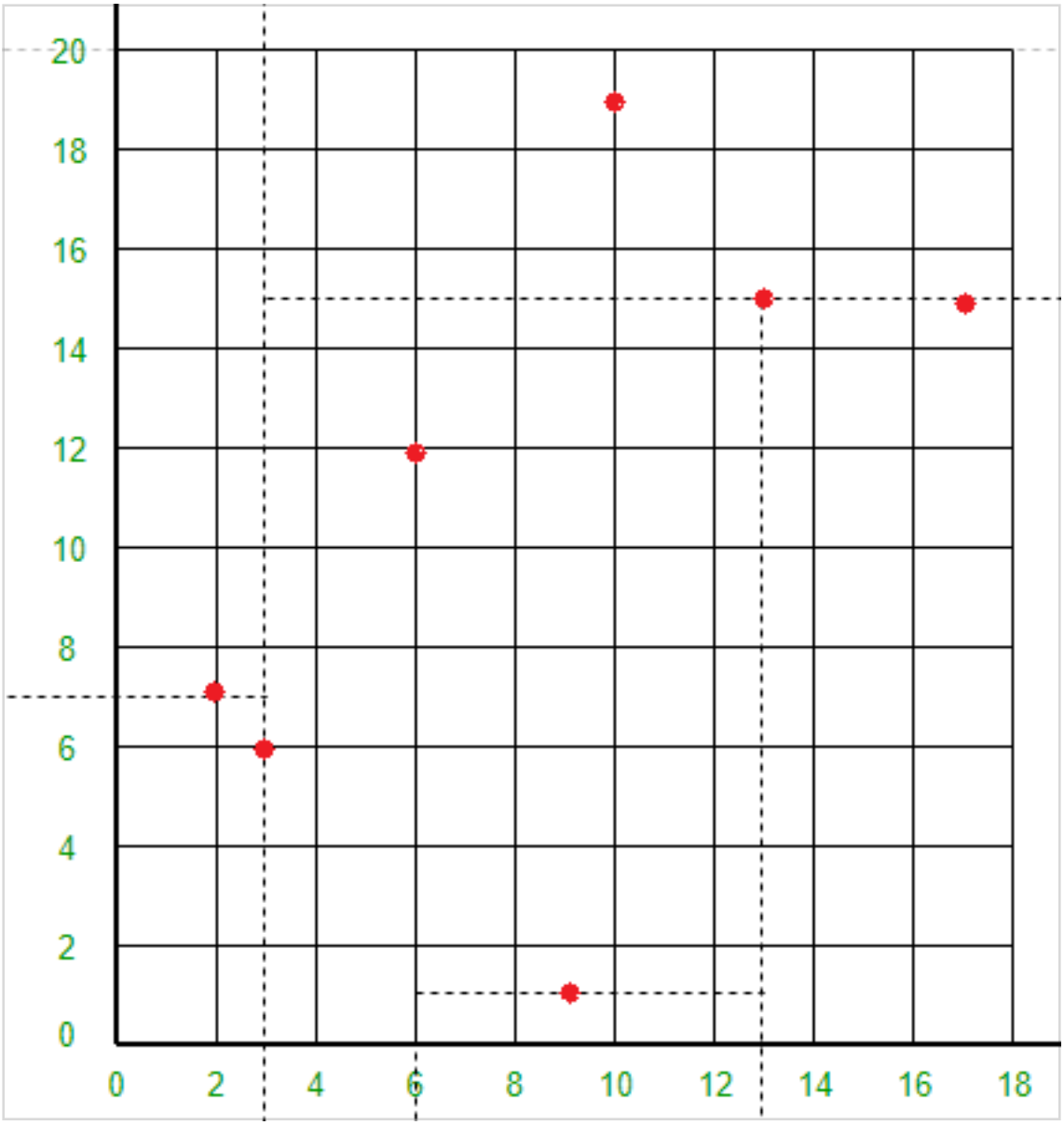
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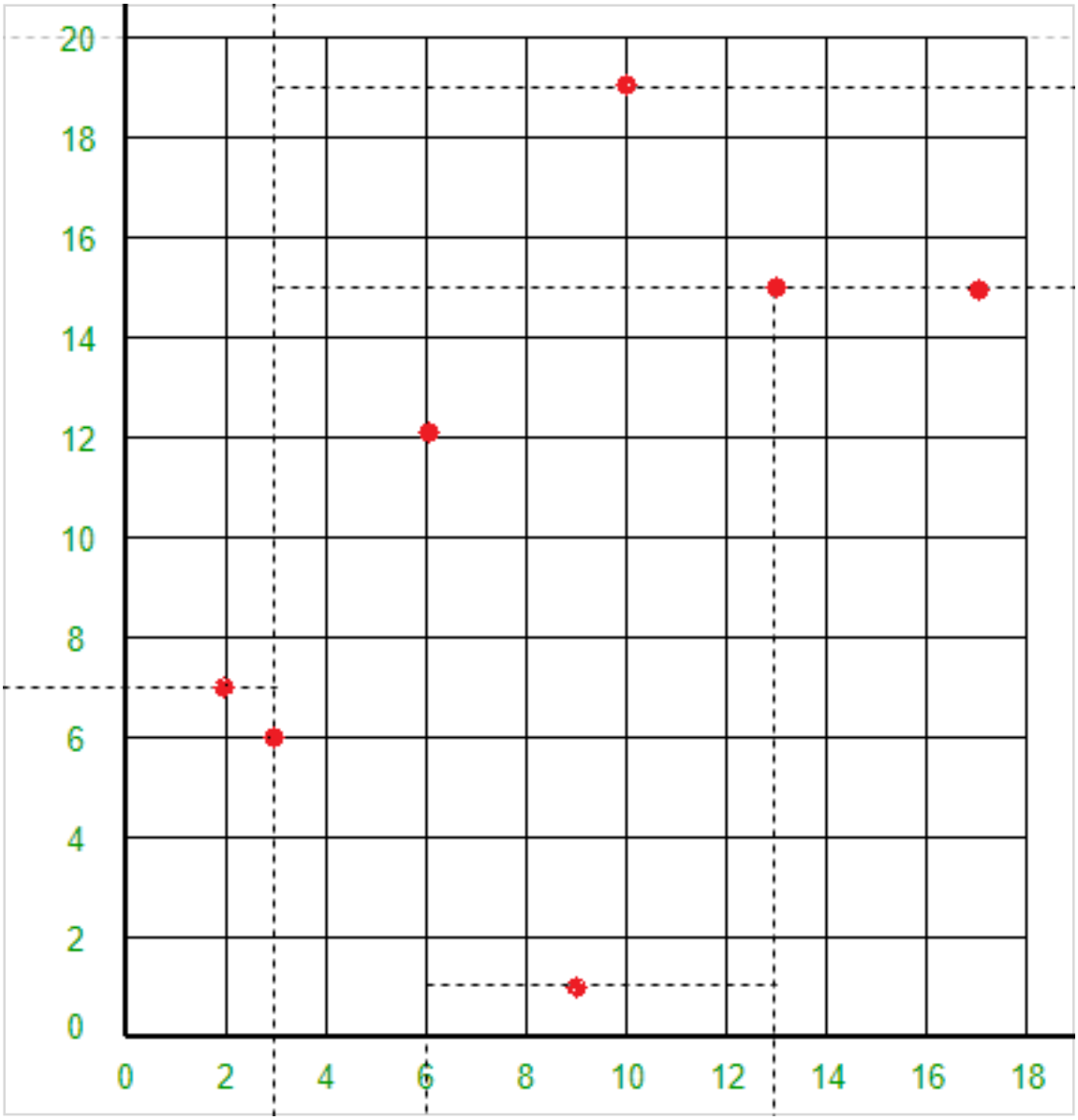
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