Clicker Quiz Disjoint Sets – Oct 27

1. What algorithms that we recently studied made use of the concept of disjoint sets?

A. Depth-first search
B. Breadth-first search
C. Prim’s MST
D. Kruskal’s MST
E. None of these
2. Suppose we have $n$ objects and we execute $n$ Make-Set operations, followed by $(n - 1)$ Union operations, so that $m = 2n - 1$. We spend $\Theta(n)$ time performing the Make-Set operations. The $i^{\text{th}}$ Union operation updates $i$ objects, so the total number of objects updated by all Union operations is:

A. $i^2$
B. $\lg i$
C. $\lg n$
D. $\sum_{i=1}^{n} i$
E. $\sum_{i=1}^{n-1} i$
Answers

1. D: Kruskal’s for sure; we created a forest of trees and then joined them.
2. E: $\Theta(n^2)$