

Disjoint Sets

For each of the arrays below, write whether this could be the array representation of a weighted quick union with path compression and explain your reasoning.

| | i: | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|----|-------|-------|---|---|---|---|---|---|----|---|-----|
| | | ----- | | | | | | | | | |
| A. | a[i]: | 1 | 2 | 3 | 0 | 1 | 1 | 1 | 4 | 4 | 5 |
| B. | a[i]: | 9 | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 9 | -10 |
| C. | a[i]: | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | -10 |
| D. | a[i]: | -10 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 6 | 2 |
| E. | a[i]: | -10 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 6 | 8 |
| F. | a[i]: | -7 | 0 | 0 | 1 | 1 | 3 | 3 | -3 | 7 | 7 |