```cpp
#include <bits/stdc++.h>
#define f(x, y, z) for(int x = (y); x <= (z); ++x)
#define g(x, y, z) for(int x = (y); x < (z); ++x)
#define h(x, y, z) for(int x = (y); x >= (z); --x)
#define foreach(x, y) for(__typeof(y.begin()) x = y.begin(); x != y.end(); ++x)
using namespace std;

int fa[18][200007];

char buf[256];
int qs[500007], qt[500007], qw[500007];
typedef pair<int, int> pii;
vector<pii> adj[200007];

bool vis[200007];
int dep[200007], sw[200007];
void dfs(int x, int p, int cdep, int csw)
{
    if(vis[x]) return;
    vis[x] = 1;
    fa[0][x] = p; dep[x] = cdep; sw[x] = csw;
    foreach(it, adj[x]) dfs(it->first, x, cdep + 1, csw + it->second);
}
int lca(int x, int y)
{
    if(dep[x] < dep[y]) swap(x, y);
    int dd = dep[x] - dep[y];
    h(i, 17, 0) if(dd >> i & 1) x = fa[i][x];
    if(x == y) return x;
    h(i, 17, 0) if(fa[i][x] != fa[i][y])
    {
        x = fa[i][x]; y = fa[i][y];
    }
    return fa[0][x];
}

int _fa[500007];
int find(int x)
{
    if(_fa[x] == x) return x;
    return _fa[x] = find(_fa[x]);
}

int main()
{
    int n, q; fgets(buf,sizeof(buf),stdin);
    sscanf(buf, "%d%d", &n, &q);
    f(i, 1, q)
    {
        fgets(buf,sizeof(buf),stdin);
        if(sscanf(buf, "%d%d%d", qs + i, qt + i, qw + i) == 2) qw[i] = -1;
        else
        {
            adj[qs[i]].push_back(pii(qt[i], qw[i]));
            adj[qt[i]].push_back(pii(qs[i], qw[i]));
        }
    }
}
```

```
        }
    }
    f(i, 1, n) dfs(i, 0, 1, 1);
    g(j, 1, 18) f(i, 1, n) fa[j][i] = fa[j - 1][fa[j - 1][i]];
    f(i, 1, n) _fa[i] = i;
    f(i, 1, q) if(qw[i] == -1)
    {
        int s = qs[i], t = qt[i];
        if(find(s) != find(t)) printf("-1\n");
        else printf("%d\n", sw[s] + sw[t] - 2 * sw[lca(s, t)]);
    }
    else _fa[find(qs[i])] = find(qt[i]);
    return 0;
}
```