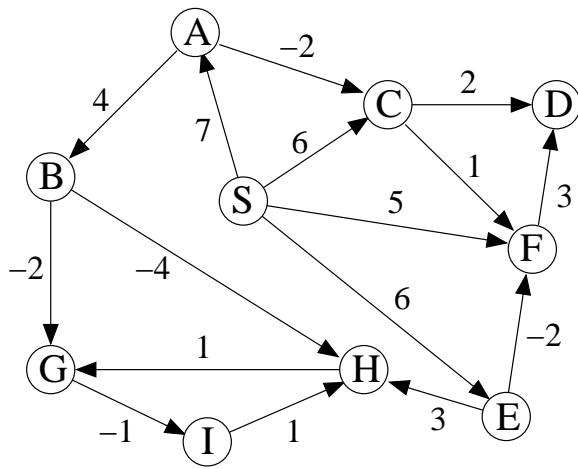


2. Work Problem 4.2 on page 120 of your textbook.



3. You are working on computer which lacks multiplication and addition. However, it can add or subtract 1 or 2. What does this function do? What is its loop invariant?

```
int double(int n)
// input condition: n >= 0
{
    int p = n;
    int q = 0;
    while(p > 0)
    {
        p = p-1;
        q = q+2;
    }
    return q;
}
```

4. Walk through Kruskal's algorithm on the graph shown below. Show the union/find data structure after each step.

