1. Work Problem 4.1 on page 120 of your textbook.
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?

```c
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.