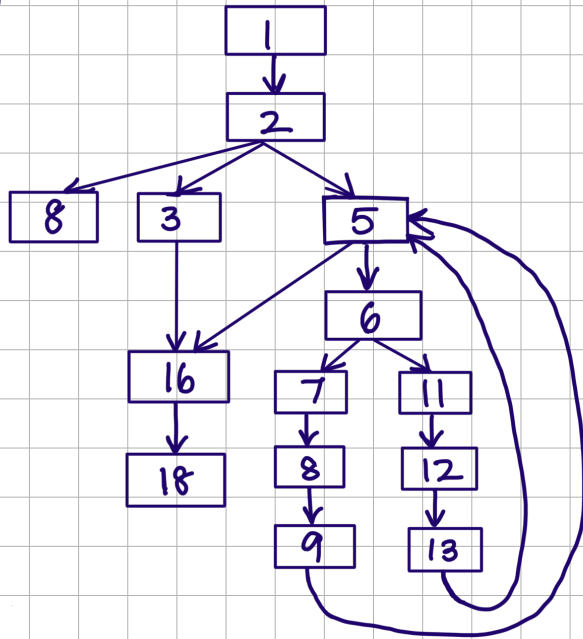


Question 1

1.



2.  $C = E - N + 2P$   
 $= 15 - 13 + 2 = 4$

3. Test cases to cover all paths:

① Both  $x < 1$  and  $y < 1$

Test case:  $\text{gcd}(0, 0)$ , expect = null

②  $(x < 1)$  true and  $(y < 1)$  false

Test case:  $\text{gcd}(0, 5)$ , expect = null

③  $(x < 1)$  false and  $(y < 1)$  false and  $(x \neq y)$  true

Test case:  $\text{gcd}(15, 9)$ , expect = 3

4. Additional test cases for MCDC coverage:

①  $(x < 1)$  false and  $(y < 1)$  true

Test case:  $\text{gcd}(0, 5)$ , expect = null

②  $(x < 1)$  false and  $(y < 1)$  false and  $(x \neq y)$  false

Test case:  $\text{gcd}(5, 5)$ , expect = 5

5. Test cases are coded in the zip file along with Question 2 and Question 3.