For maximum credit, show all your work. Please raise your hand if you have a question.

Write a program for our x370 processor that applies Euclid’s original algorithm to 2 numbers to find the greatest common divisor. For those of you who have forgotten Euclid’s original algorithm, a C/Java program that finds the GCD of x and y, with the result in y, is shown below.

Hint: Write your program first to the right as shown (using whatever notation you like as long as I can understand it.) And then turn it into binary on the left.

[Note: The > is a typo – it should have been >= : the solution is for the code as written.]

```c
x = 12;
y = 20;
while (x != 0) {
    if (x > y) x = x - y;
    else  y = y - x;
}
```

A B C D E