


Find an input that causes the program to reach the **ERROR**?

```
int twice(int v) {  
    return 2 * v;  
}  
  
void test(int x, int y) {  
    z = twice(y);  
    if (x == z) {  
        if (x > y + 10)  
            ERROR;  
    }  
}  
  
int main() {  
    x = read();  
    y = read();  
    test(x, y);  
}
```



Symbolic store

$$\begin{aligned}x &\mapsto x_0 \\ y &\mapsto y_0 \\ z &\mapsto 2 * y_0\end{aligned}$$

Path constraint

$$\begin{aligned}x_0 &= 2 * y_0 \\ x_0 &> y_0 + 10\end{aligned}$$

We can now ask the SMT solver for a satisfying assignment to the path constraint.

For instance,  $x_0 = 40, y_0 = 20$  is a satisfying assignment. That is, running the program with these inputs triggers the error.