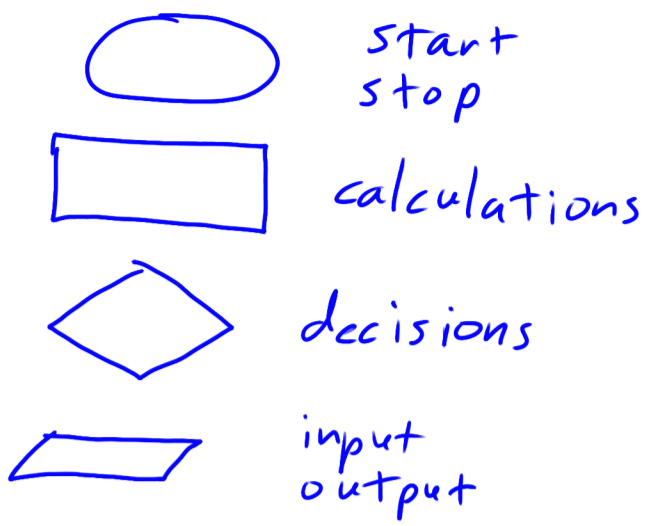


Flow Charts

Blocks



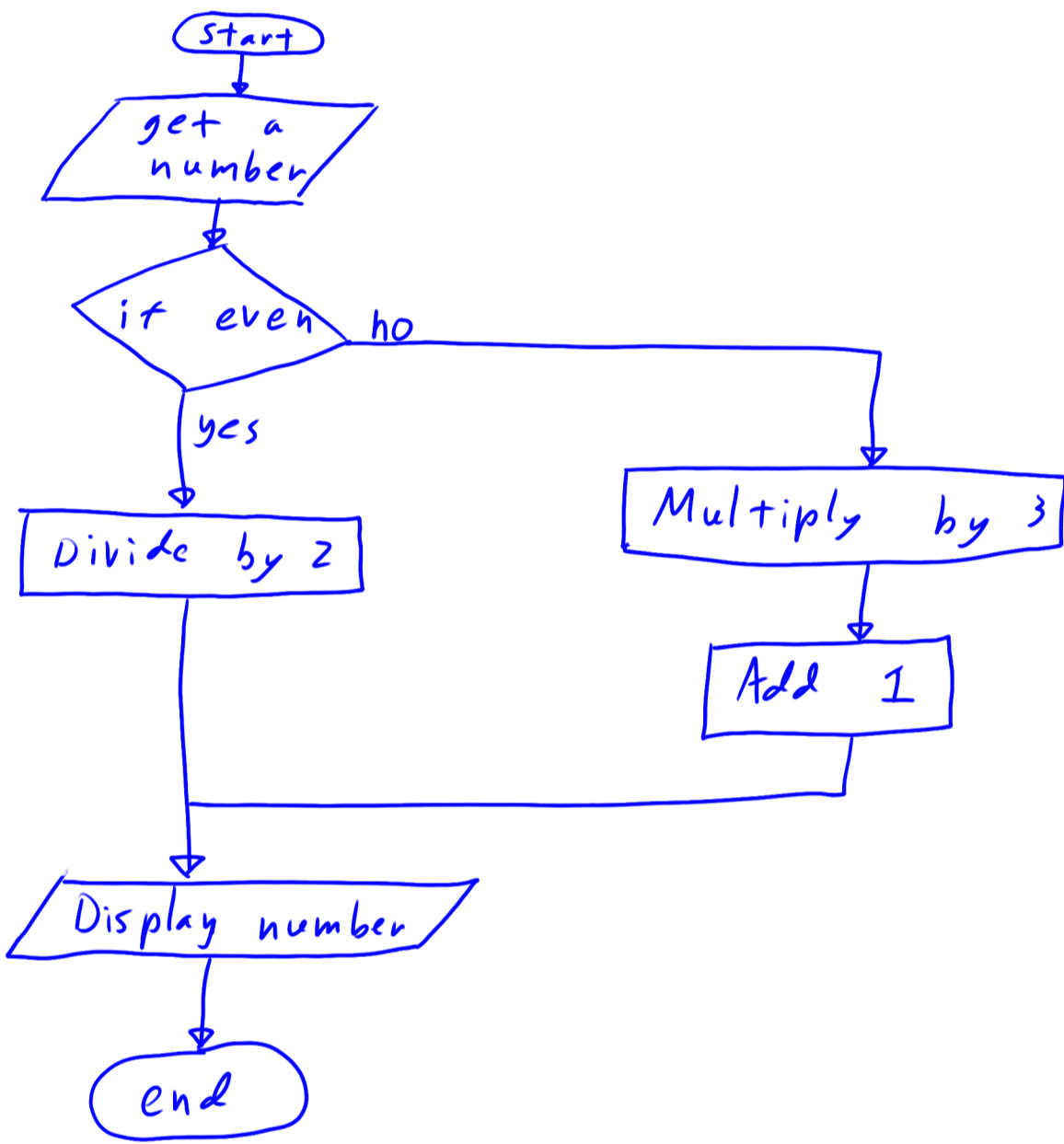
connect with arrows

Collatz Conjecture

1937

$$2^{68} \approx 2.95 \times 10^{20}$$

take a number
 if even divide by 2
 if odd multiply by 3 and add 1
 we will end at 1



Pseudocode

```

X = getnumber()
if X is divisible by 2
  X = X / 2
else
  X = 3X + 1
display X
  
```

Syntax

the rules of what correct language is

```

if condition
if comparison
  some code
else
  some other code
end
  
```

Modulo function

$\text{mod}(x, y)$ remainder of $\frac{x}{y}$

$$\text{mod}(7, 2) = 1$$

$$\frac{7}{2} = 3.5$$

$$\frac{7}{2} = 3 + \frac{1}{2}$$

$$\text{mod}(6, 2) = 0$$

$$3 \cdot 2 = 6$$

$$3 \cdot 2 + 1 = 7$$

$$\text{mod}(7, 3) = 1$$

