

LOOPS

LECTURE DATE: 18 OCT

Remind them what computers are good at that humans are not

→ doing boring things really quickly
Facebook happy birthday example

Lets say we wanted to calculate $\sin(x)$ by using the Taylor series.

$$\sin(x) = \sum_{k=0}^{\infty} \frac{(-1)^k x^{2k+1}}{(2k+1)!}$$

the inputs will be angle x in degrees
and n number of terms for series

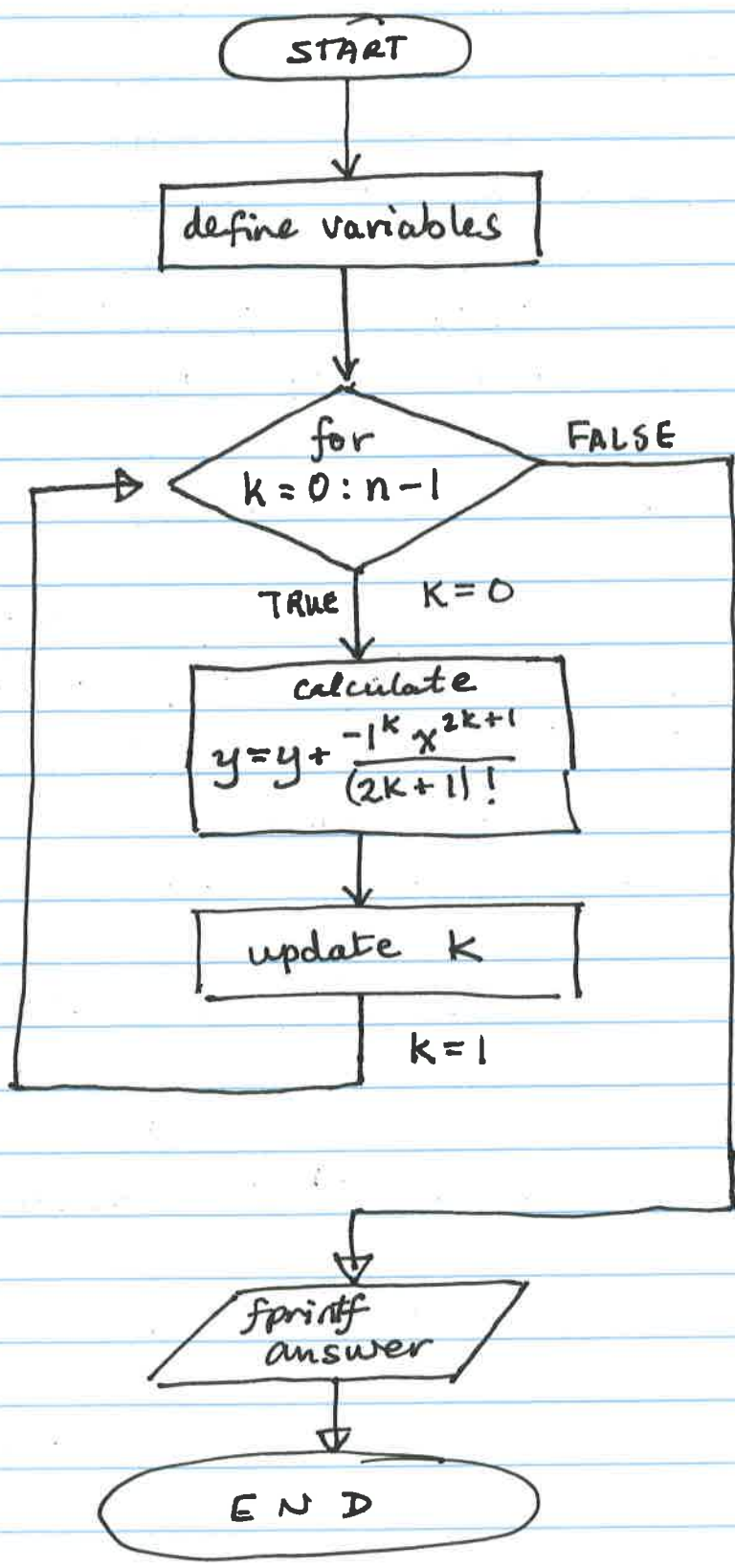
lets calculate $\sin(150^\circ)$ using 3, and ^{compare to} 7 terms

HOW WOULD YOU DO IT? This was almost an exam problem. → use elementwise operations

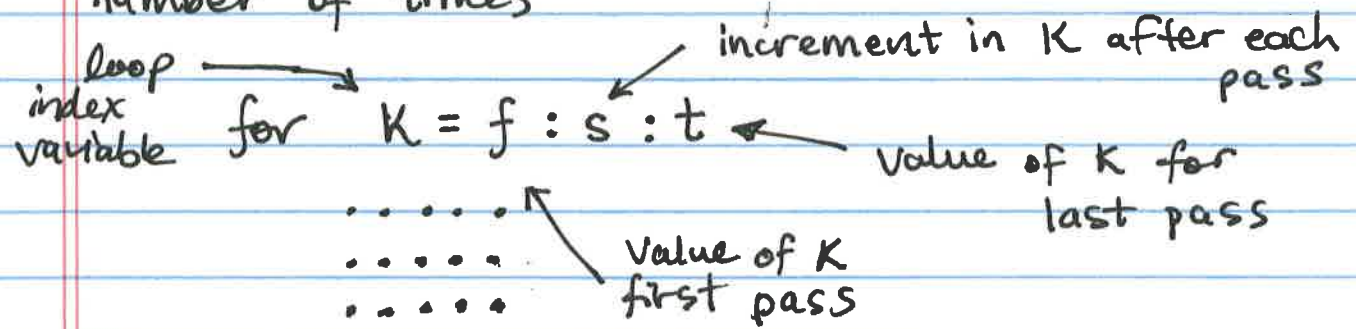
See elementwise_example.m

We can also do loops

loops_example.m



FOR-END loops execute a pre determined number of times



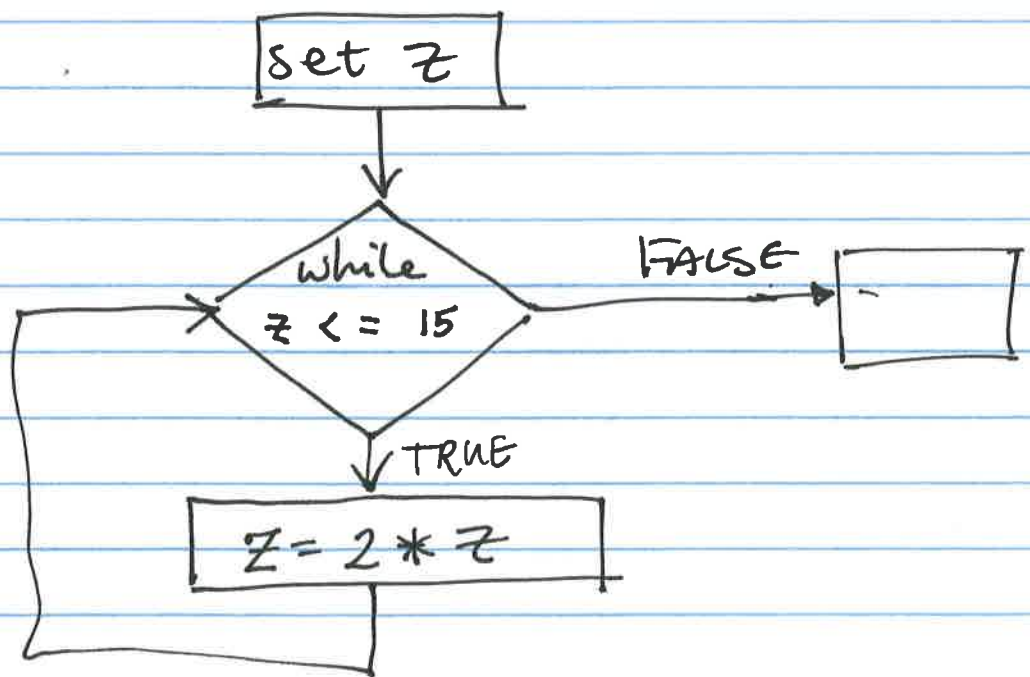
end

Notes:

- \rightarrow MUST have an end command
- \rightarrow when loop ends loop index variable exists in workspace w/ last num assigned to it

While-End loop

What is the difference?
For-END iterates for you!



will continue executing

While conditional statement

~~~~~  
commands  
UNTIL false

~~~~~  
~~~~~  
~~~~~

end

Notes:

- * Conditional must include at least one variable and must have value BEFORE executing