Learn to Program

For the Induction Programme, BSE 2025/26 OUSL
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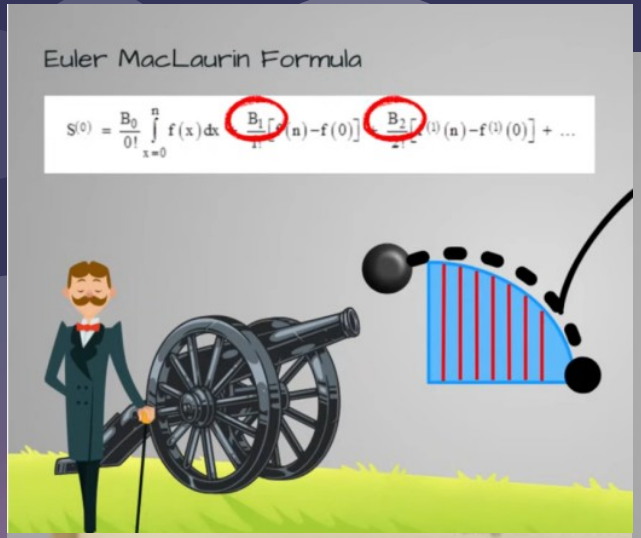
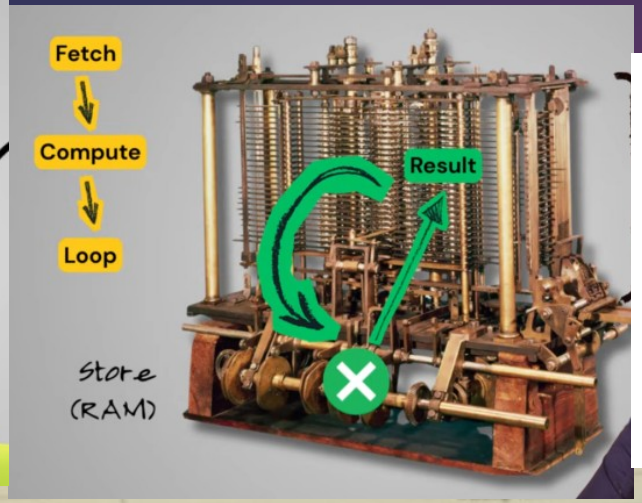
Recap: Hardware, Software/program





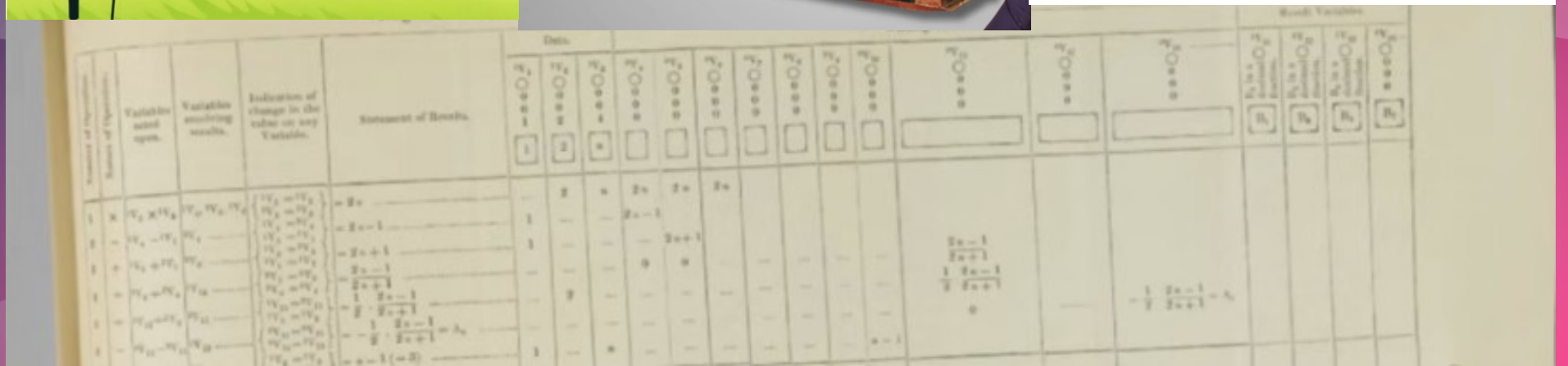
(2*x**3 – 2)

x/10 13/5 → 2.6 float division

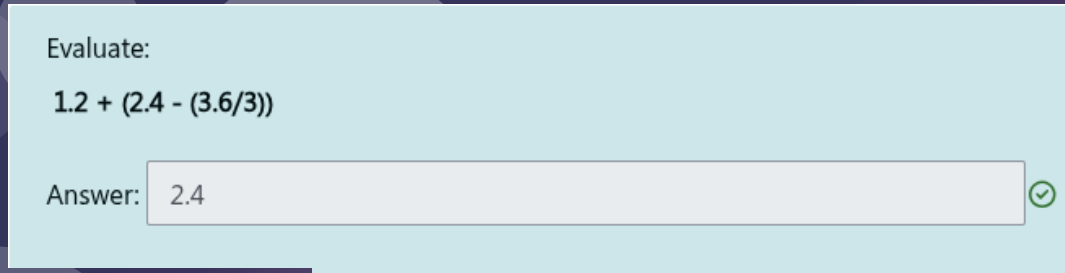
floor division 13//5 → 2

remainder (modulo) div 13%5 → 3

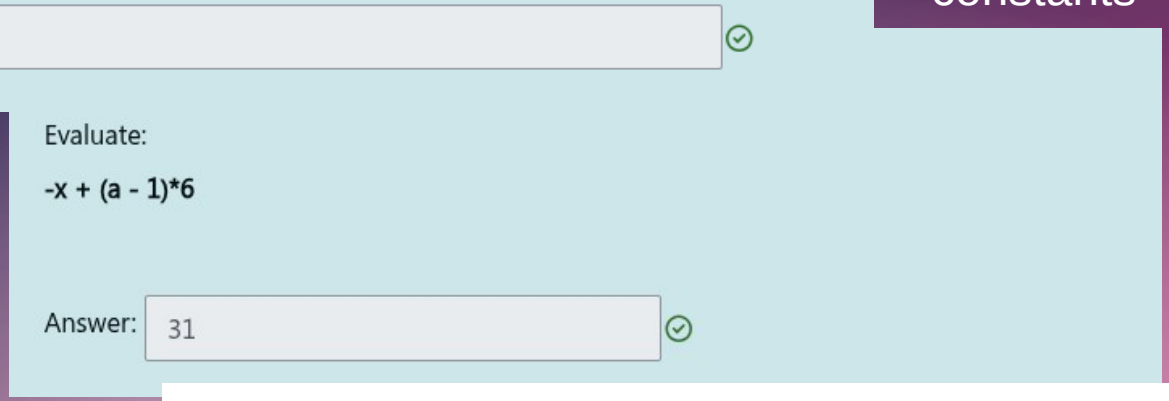
sqrt(48) sin(x) cos(y)



Recap: Mathematical expressions



1.1 Mathematical expressions with constants



1.2 Mathematical expressions with variables

Note that the computer marking is sensitive to where you put space character and where not. This example shows the correct use:

2*a*(3*x + 5) - 5*b/(y - 9) $3 * x + 5$

- no space before or after ***** and **/**

- always a space before and after **+** and **-** unless unary plus and minus, eg. a = +1.1 or b = -1.1)

- no space after **(** or before **)**

2. Variables, the assignment Operator

main.py

```
1  print("Calculates the area of a rectangular triangle")
2  x = 4.2
3  y = 5.0
4
5  # TODO
6  # Enter the missing code line below
7
8  # Hint: a = ...
9
10 print("x = ", x)
11 print("y = ", y)
12 print("The area = ", a)
```

variable ← value

variable ← expression of values

variable ← expression of values and variables

'=' is the assignment operator

The variable a has a value of 5 and the variable x has a value -7.

Is this True or False? **x + 2*a = 12**

'==' test for equality (comes later)

- ○ True
- ◉ False

2. Basic input

2.4 VPL Fahrenheit to Centigrade

main.py

```
1  f = float(input("Type a temperature in Fahrenheit: "))
2
3  print("Temperature in Faahrenheit:", f)
4
5  # TODO : Convert Fahrenheit to Centigrade
6
7
8  print("Temperature in Centigrade:", c)
9
```

'==' test for equality (comes later)

Question time!