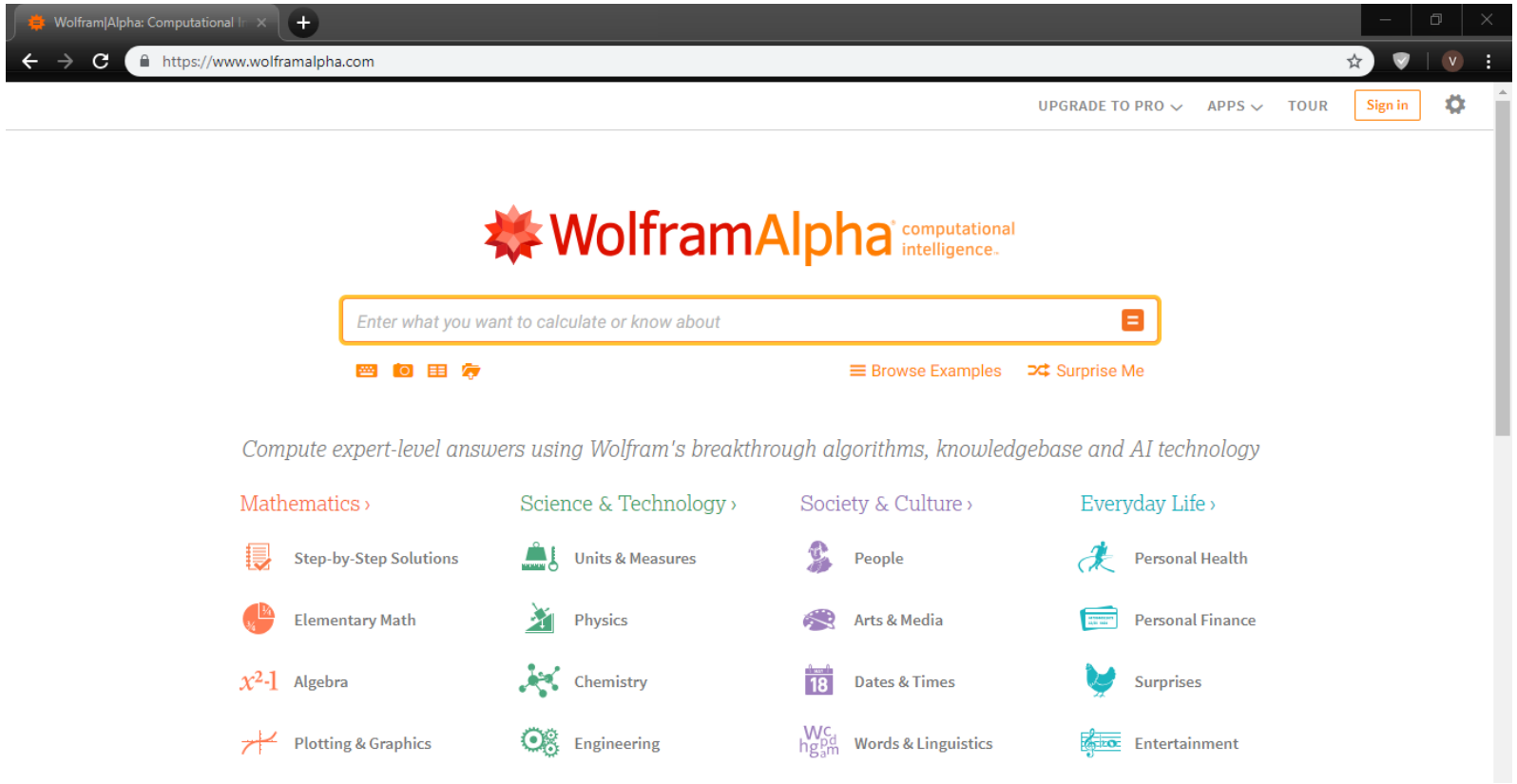
Setting up Wolfram Alpha

Step 1: Open a browser of your choosing. (We have opted for Google Chrome in this specific case, but any browser will work.)

Step2: Go to the https://www.wolframalpha.com/ website. (The page you are on, should look something like the image on the right.)

Step3: Click on the search bar which says "Enter what you want to calculate or know about." bar. It will let you type in any mathematical formula you are interested in.

Step 4: Enter the precise formula you are interested in before pressing the "Enter" key or clicking the compute button on the screen. (The one with the "=" sign.)



Typing up the integral formula

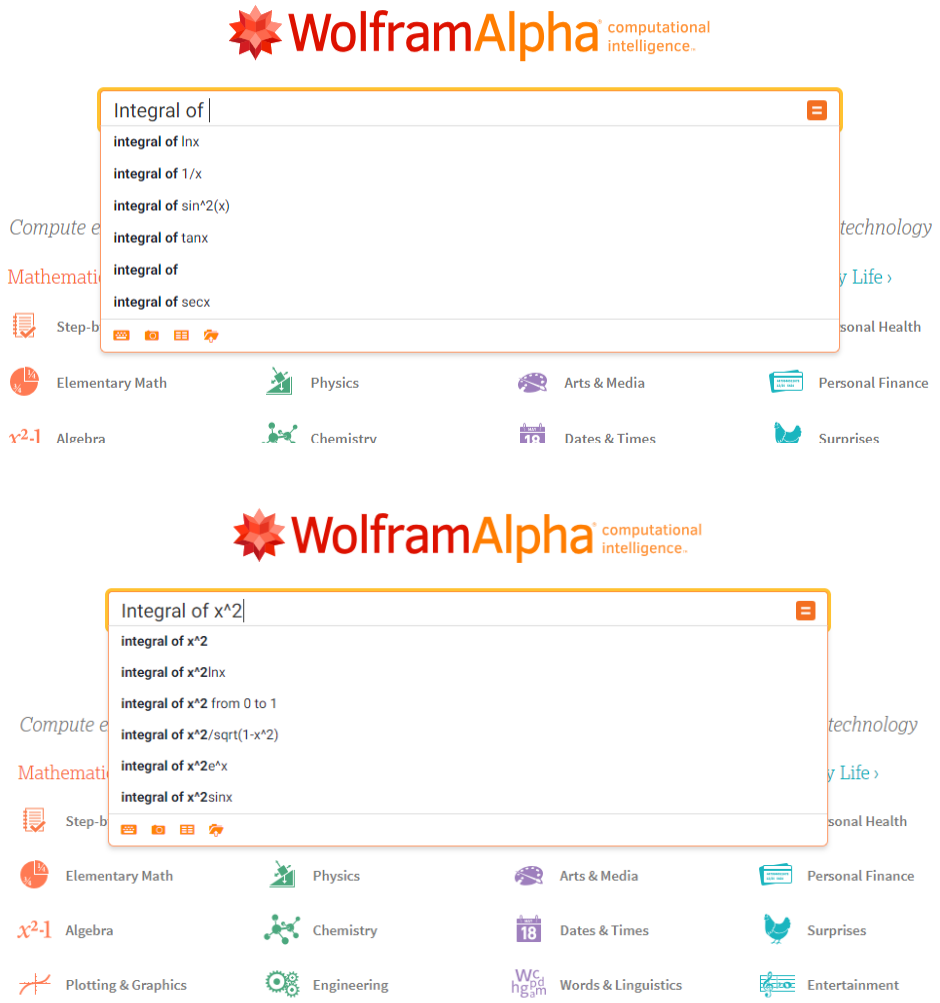
Now, let's focus on solving **integrals**.

Step 1: We start by typing in the words "Integral of" into the search bar, like the image on the right.

Step 2: Wolfram Alpha's engine will likely recommend some of the most frequently searched integrals. If the one you are looking for is included, simply select it from the list. If not, proceed to the next step.

Step 3: Type in the equation, whose integral you want to solve. For instance, if the function you are interested in is "$y = x^2$", you type in "x^2".

Step 4: After we type in the appropriate function we press the "Enter" key.



Expressing Complex Formulas

Now, let's focus on the various notation we use for the **different complex functions**.

Power: If we want to express a number raised to a specific degree/power, we use the "^" sign. For instance, $\mathrm{y\^{}n} = y^n$.

Euler's Constant: To express Euler's constant we simply type in the letter "e".

Pi: If the function we want to use features π, we simply type in the word "pi".

Natural Log: To express the natural log of a number, we just write the letters "ln" followed by the number

Trigonometric Functions: We simply type in the abbreviations for the given function **(e.g. sin, cos, ta cot)**

The expression below is equivalent to $\int e^x \pi dx$. Note, we omit typing "dx" because it is trivial when we only have one random variable.

The expression below is equivalent to $\int \ln \sin x \, dx$.

Understanding the Solution

Now, let's focus on a specific function like $\int e^x x dx$.

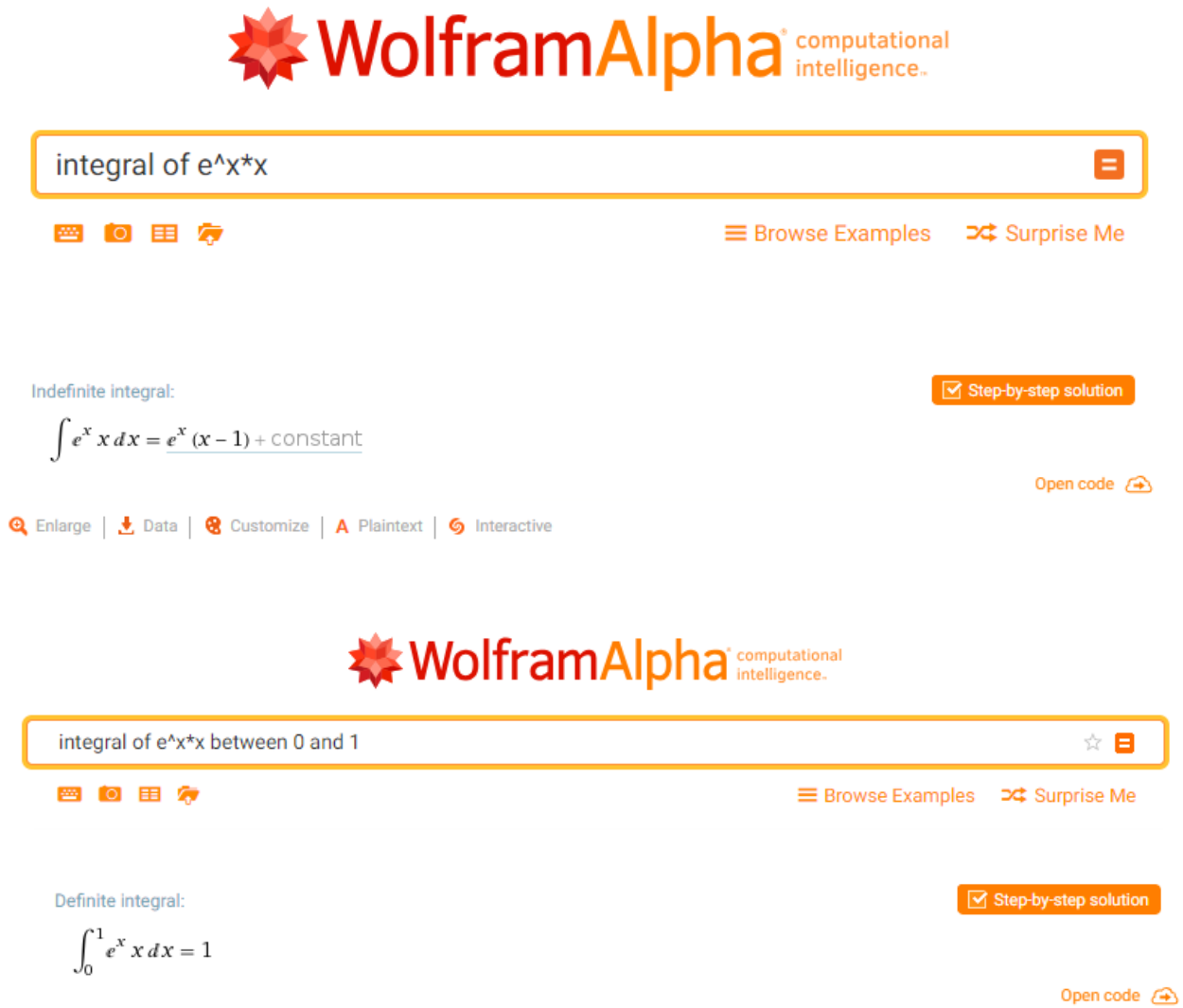
Step 1: Type in the integral like we explained earlier and press the "Enter" key:

Step 2: The software provides us with several outputs after computing the integral. We focus on the first one which is called "Indefinite Integral".

Step 3: The solution we get is another function which provides an output for any value x we input into it.

Step 4: We might want to compute the values of this interval within a specific interval from a to b. In such instances, we add "between a and b" at the end of the integral before computing.

Step 5: If we have a well-defined range like this, we need to analyse the "Definite Integral" section for our solution.



365 DataScience