MY STORY

by Albert Lai

Once upon a time, there was an android called Albert. *(An android is something like* **Lt. Cmdr. Data**, *if you have watched* **ST:TNG**.*)* He liked to apply logic and mathematics to *every*thing in *every*day life. MATB43, MATB31, MATB42, ... all math he had learned.

Now, there was also this Emöticón guy, who worked with emotions and no logic. So when Emöticón met Albert, they crashed into each other. Albert was mad at Emöticón because Emöticón didn't understand Albert; and Emöticón was mad at Albert because Albert didn't understand Emöticón.

Confusing, eh?

(*BTW, how could such a logician as Albert become mad?* :-)

One day Albert did the following math problem:

$$\int_0^1 f(x)\,dx \quad .$$

Emöticón said, "Oh, it's neat! The answer is ONE!" Albert said, "How do you know the answer is 1, while $f(x)$ is not even known?" Emöticón replied, "Because *I* feel like it! You have a problem?"

And then, the next day, Emöticón did the following math problem:

$$\sum_{n=0}^{k} \int_0^1 (-1)^{k-n} \binom{k}{n} x^{k-n}\,dx \quad .$$

Albert said, "Oh, it's easy! The answer is $\frac{-1}{(k+1)}$!" Emöticón said, "How do you know it is the answer? It is such a mess! I think *even* the prof. himself can't do it!" Albert replied, "Elementary, Emöticón!

Elementary! It's logic!

$$\begin{aligned}
&\sum_{n=0}^{k} \int_0^1 (-1)^{k-n} \binom{k}{n} x^{k-n}\, dx \\
&= \int_0^1 (1-x)^k dx \\
&= \left. \frac{(1-x)^{k+1}}{k+1} \right|_0^1 \\
&= -\frac{1}{k+1} \quad ,
\end{aligned}$$

which is to be demonstrated. *Quad erat demonstratum*!"