Writing a really exciting LaTeX document

This worksheet is really simple, just recreate what you see, but in a LaTeX document.

1: Listing things

Okay, lets start with a list of my favourite things:

- Raindrops on *roses*
- Whiskers on *kittens*
- Bright copper *kettles*
- Warm woolen *mittens*
- Brown paper *packages* tied up with string

How to make scones:

1. Heat the oven to 220C/425F/Gas 7. Lightly grease a baking sheet.
2. A. Mix together the **flour & salt** and rub in the **butter**.
   B. Stir in the **sugar** & then the **milk** to get a soft dough.
3. Turn on to a floured work surface and knead very lightly. Pat out to a round 2cm/(3/4)in thick. Use a 5cm/2in cutter to stamp out rounds and place on a baking sheet. Lightly knead together the rest of the dough and stamp out more scones to use it all up.
4. Brush the tops of the scones with the beaten egg. Bake for 12-15 minutes until well risen and golden.
5. Cool on a wire rack and serve with butter and good **jam** and maybe some clotted cream.

Notice the **boldface** and *italics*, as well as the special symbol &!

Solution (./01_latex-ws-soln.html#-1%3A-Listing-things%0A)

2: Writing Maths

Rewrite all of these, hopefully familiar equations in LaTeX .

A Quadratic equation: $ax^2 + bx + c = 0$.

The quadratic formula:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}.$$

A matrix equation

$$\begin{pmatrix} a & \log b \\ c & d \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 0 \\ 0 \end{pmatrix}$$

can be rewritten as a system of linear equations

$$\begin{aligned} ax + \log(b)y &= 0 \\ cx + dy &= 0. \end{aligned}$$

The Riemann zeta function

$$\zeta(s) = \sum_{n=1}^{\infty} \frac{1}{n^s}$$

can be rewritten as

$$\zeta(s) = \frac{1}{\Gamma(s)} \int_0^{\infty} \frac{x^{s-1}}{e^x - 1}\, dx,$$

where

$$\Gamma(s) = \int_0^{\infty} e^{-x} x^{s-1}\, dx.$$

Solution (./01_latex-ws-soln.html#-2%3A-Writing-Maths%0A)

3: Time for a table

A timetable!

Time	Activity	Energy Levels
0730	Get Up	15%
0745	Eat Breakfast	100%
0815	Go to Office	80%
0900	Do Research	20%
1230	Have Lunch	100%
1330	More Research	0%
1730	Go Home	-10%
2000	Make Tea	50%
2330	Sleep	40%

The LaTeX table will probably look differet, but should contain the same information.

Solution (./01_latex-ws-soln.html#-3%3A-Time-for-a-table%0A)

4: Ooh, what a picture!

A picture of Donald Knuth, creator of TEX , playing the organ. https://cs.stanford.edu/~knuth/dek-badge-20120614.jpg (https://cs.stanford.edu/~knuth/dek-badge-20120614.jpg)

Add a caption explaining who took the picture, and where it came from!

Hint:

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https://cs.stanford.edu/~knuth
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Solution (./01_latex-ws-soln.html#-4%3A-Ooh%2C-what-a-picture!%0A)