

# OS9

December 2020

## 1 text

*why L<sup>A</sup>T<sub>E</sub>X?*

*I It makes beautiful documents*

*I Especially mathematics*

*I It was created by scientists, for scientists*

*I A large and active community*

*I It is powerful — you can extend it*

*I Packages for papers, presentations, spreadsheets, . . .*

## 2 image



*best nature picture*

### 3 table

<i>7C0</i>	<i>hexadecimal</i>
<i>3700</i>	<i>octal</i>
<i>11111000000</i>	<i>binary</i>
<i>1984</i>	<i>decimal</i>

### 4 formula

$$E = mc^2 \quad (*)$$

$$\begin{aligned}\sin A \cos B &= \frac{1}{2} [\sin(A - B) + \sin(A + B)] \\ \sin A \sin B &= \frac{1}{2} [\sin(A - B) - \cos(A + B)] \\ \cos A \cos B &= \frac{1}{2} [\cos(A - B) + \cos(A + B)]\end{aligned}$$

Use the Stirling formula to show that

$$\frac{a^n}{n!} \sim \frac{1}{\sqrt{2\pi n}} \left(\frac{ae}{n}\right)^n \quad (n \rightarrow \infty)$$

when  $a$  is any constant, and deduce that

$$\lim_{n \rightarrow \infty} \frac{a^n}{n!} = 0$$

### 5 code

```
#include <stdio.h>
#define N 10
/* Block
 * comment */

int main()
{
    int i;
```

```
// Line comment.  
puts("Hello_world!");  
  
for (i = 0; i < N; i++)  
{  
    puts("LaTeX_is_also_great_for_programmers!");  
}  
  
return 0;  
}
```