

Math Notes

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1 Text Formatting

1.1 Font Styles

Type	Format	Result
Bold	<code>\textbf{Text}</code>	Text
<i>Italics</i>	<code>\textit{Text}</code>	<i>Text</i>
<u>Underline</u>	<code>\underline{Text}</code>	<u>Text</u>

Source

<https://latex-tutorial.com/symbols/text-formatting/>

Further Study

https://www.overleaf.com/learn/latex/Bold%2C_italics_and_underlining

<https://latex-tutorial.com/changing-font-style/>

1.2 Font Sizes

Type	Format	Result
tiny	<code>{\tiny Text}</code>	<small>Text</small>
scriptsize	<code>{\scriptsize Text}</code>	<small>Text</small>
footnotesize	<code>{\footnotesize Text}</code>	<small>Text</small>
small	<code>{\small Text}</code>	<small>Text</small>
normalsize (default)	<code>{\normalsize Text}</code>	<small>Text</small>
large	<code>{\large Text}</code>	<big>Text</big>
Large	<code>{\Large Text}</code>	Text
LARGE	<code>{\LARGE Text}</code>	Text
huge	<code>{\huge Text}</code>	Text
Huge	<code>{\Huge Text}</code>	Text

Source

<https://texblog.org/2012/08/29/changing-the-font-size-in-latex/>

<https://latex-tutorial.com/symbols/text-formatting/>

1.3 Verbatim

https://www.overleaf.com/learn/latex/Code_listing

2 Symbols

2.1 Degrees Symbol

The `\degree` command is provided by the `gensymb` package, so if you add:

```
\usepackage{gensymb}
```

to your preamble, that should enable the command.

Another alternative is the `\textdegree` command, which is provided by the `textcomp` package. And finally, $\text{\textcircled{\scriptsize $}}$ is another way of obtaining roughly the right symbol.

3 Tables

Tables are Included in \LaTeX there are no packages are required to be used.

3.1 Table with no Borders

<pre> 1 \begin{center} 2 \begin{tabular}{c c c} 3 cell1 & cell2 & cell3\\ 4 cell4 & cell5 & cell6\\ 5 cell7 & cell8 & cell9 6 \end{tabular} 7 \end{center} </pre>	<table border="0"> <tr><td>cell1</td><td>cell2</td><td>cell3</td></tr> <tr><td>cell4</td><td>cell5</td><td>cell6</td></tr> <tr><td>cell7</td><td>cell8</td><td>cell9</td></tr> </table>	cell1	cell2	cell3	cell4	cell5	cell6	cell7	cell8	cell9
cell1	cell2	cell3								
cell4	cell5	cell6								
cell7	cell8	cell9								

3.2 Table with Borders

<pre> 1 \begin{center} 2 \begin{tabular}{ c c c } 3 \hline 4 cell1 & cell2 & cell3\\ 5 cell4 & cell5 & cell6\\ 6 cell7 & cell8 & cell9\\ 7 \hline 8 \end{tabular} 9 \end{center} </pre>	<table border="1"> <tr><td>cell1</td><td>cell2</td><td>cell3</td></tr> <tr><td>cell4</td><td>cell5</td><td>cell6</td></tr> <tr><td>cell7</td><td>cell8</td><td>cell9</td></tr> </table>	cell1	cell2	cell3	cell4	cell5	cell6	cell7	cell8	cell9
cell1	cell2	cell3								
cell4	cell5	cell6								
cell7	cell8	cell9								

3.3 Table with Double Borders

<pre> 1 \begin{center} 2 \begin{tabular}{ c c c } 3 \hline 4 cell1 & cell2 & cell3\\ 5 \hline 6 cell4 & cell5 & cell6\\ 7 \hline 8 cell7 & cell8 & cell9\\ 9 \hline 10 cell10 & cell11 & cell12\\ 11 \hline 12 \end{tabular} 13 \end{center} </pre>	<table border="3"> <tr><td>cell1</td><td>cell2</td><td>cell3</td></tr> <tr><td>cell4</td><td>cell5</td><td>cell6</td></tr> <tr><td>cell7</td><td>cell8</td><td>cell9</td></tr> <tr><td>cell10</td><td>cell11</td><td>cell12</td></tr> </table>	cell1	cell2	cell3	cell4	cell5	cell6	cell7	cell8	cell9	cell10	cell11	cell12
cell1	cell2	cell3											
cell4	cell5	cell6											
cell7	cell8	cell9											
cell10	cell11	cell12											

Source

<https://www.overleaf.com/learn/latex/Tables>

4 Columns

5 Tikz

5.1 circuitikz

[https://www.overleaf.com/learn/latex/LaTeX_Graphics_using_TikZ%3A_A_Tutorial_for_Beginners_\(Part_4\)%E2%80%94Circuit_Diagrams_Using_Circuitikz](https://www.overleaf.com/learn/latex/LaTeX_Graphics_using_TikZ%3A_A_Tutorial_for_Beginners_(Part_4)%E2%80%94Circuit_Diagrams_Using_Circuitikz)

6 Including Files

https://www.overleaf.com/learn/latex/Code_listing

```
1 bool Graph::isCycle() { //similar to DFS
2 for(int i = 0; i < size; i++) {
3     parents[i] = i;
4     colors[i] = i;
5     colors[i] = 'W';
6 }
7 int t = 0;
8
9 for(int i =0; i < size; i++) {
10     //nodes are either White or Black in here
11     if(colors[i] == 'W'){
12         //color[i] = 'G';
13         bool res = isCycleVisit(i, t);
14         if(res)
15             return res;
16     }//if
17 }//for
18 return false;
19 }
```

Function: Graph::isCycle()