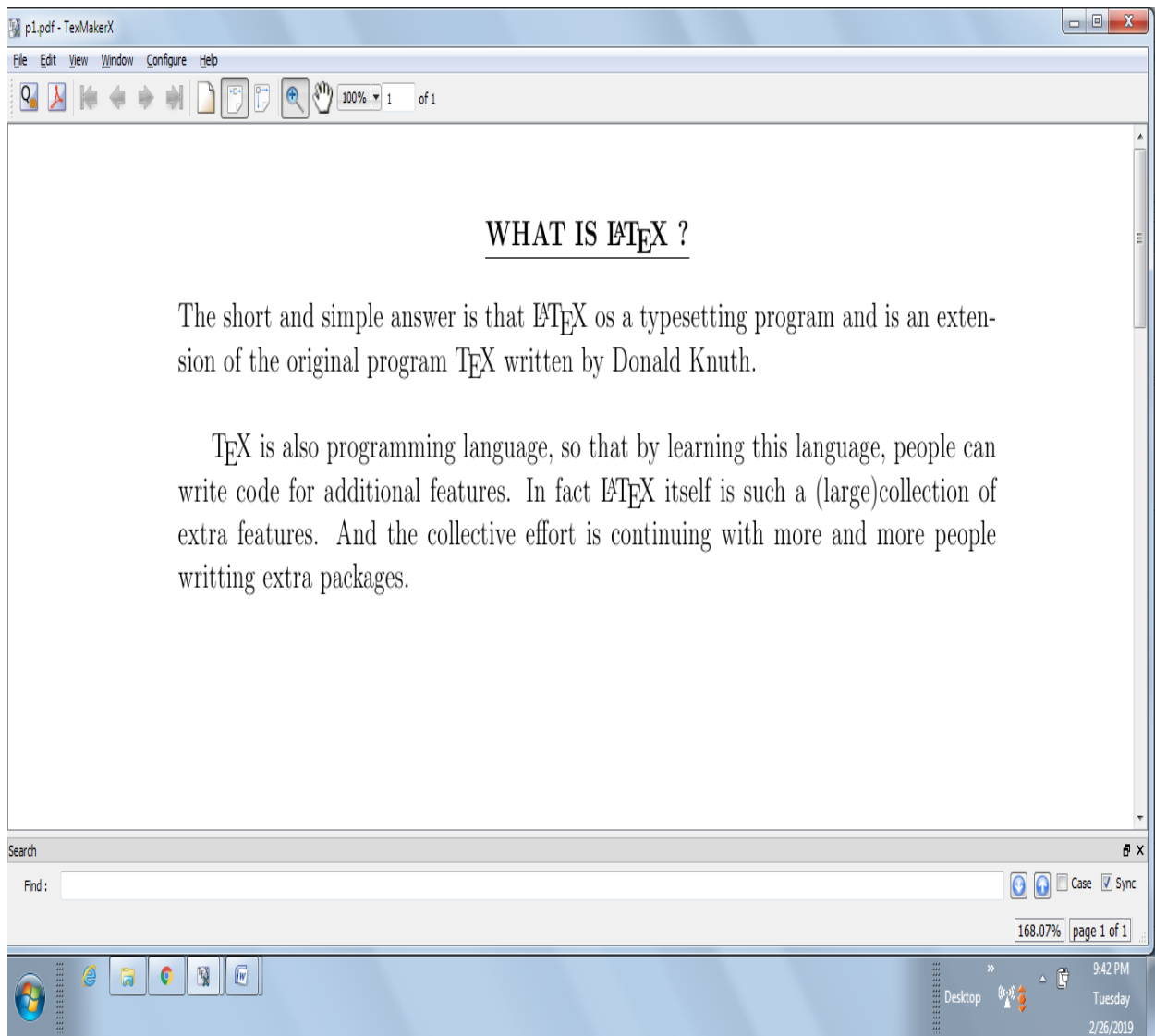


Ex.No : 01

Two Paragraphs with a Heading

Date :

```
\documentclass[12pt, a4paper]{article}
\usepackage[left = 1.25in, right = 1.00in, top = 1.00cm, bottom = 1.00 cm]{geometry}
\begin{document}
\begin{center}
\underline{\textbf{WHAT IS \LaTeX\ ?}}
\end{center}
\indent
The short and simple answer is that \LaTeX\ os a typesetting program and is an extension of the
original program \TeX\ written by Donald Knuth.\
\par \TeX\ is also programming language, so that by learning this language, people can
write code for additional features. In fact \LaTeX\ itself is such a (large)collection of extra
features.
And the collective effort is continuing with more and more people writting extra packages.
\end{document}
```



Ex.No : 02

Four paragraphs containing single, double quotation,
italic words and symbols

Date :

```
\documentclass[12pt, letterpaper]{article}
```

```
\usepackage[left = 1.25in, right = 1.00in, top = 1.00cm, bottom = 1.00cm]{geometry}
```

```
\begin{document}
```

```
\begin{center}
```

```
\underline{\textbf{Preparing a Page with four paragraphs}}
```

```
\end{center}
```

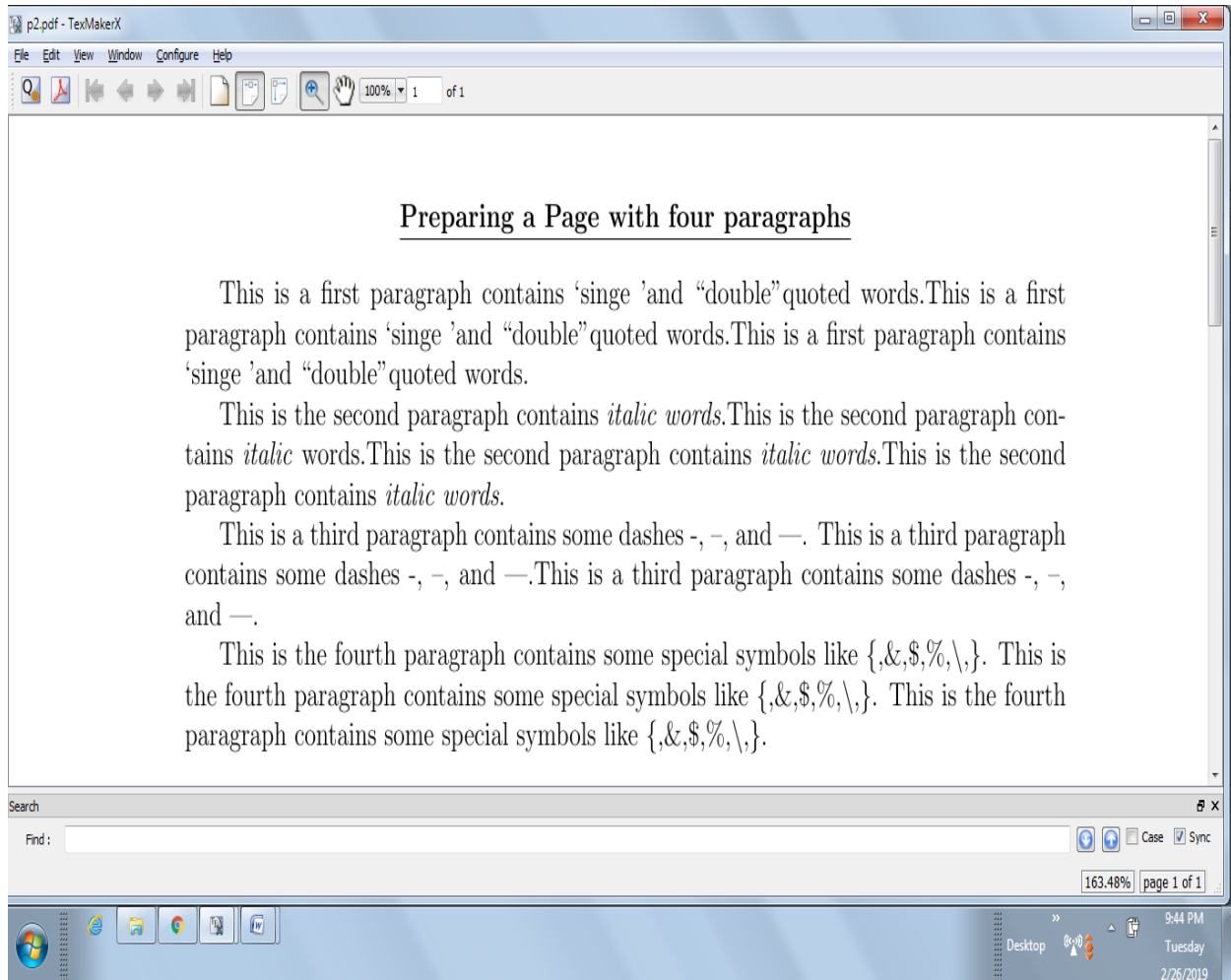
\par This is a first paragraph contains \lq singe \rq and \lq\lq double\rq\rq quoted words.This is a first paragraph contains \lq singe \rq and \lq\lq double\rq\rq quoted words.This is a first paragraph contains \lq singe \rq and \lq\lq double\rq\rq quoted words.

\par This is the second paragraph contains \textit{italic words}.This is the second paragraph contains \textit{italic} words.This is the second paragraph contains \textit{italic words}.This is the second paragraph contains \textit{italic words}.

\par This is a third paragraph contains some dashes -, --, and ---. This is a third paragraph contains some dashes -, --, and ---.This is a third paragraph contains some dashes -, --, and ---.

\par This is the fourth paragraph contains some special symbols like \{,\&,\\$, \%,\$\backslash\$\, \}. This is the fourth paragraph contains some special symbols like \{,\&,\\$, \%,\$\backslash\$\, \}. This is the fourth paragraph contains some special symbols like \{,\&,\\$, \%,\$\backslash\$\, \}.

```
\end{document}
```



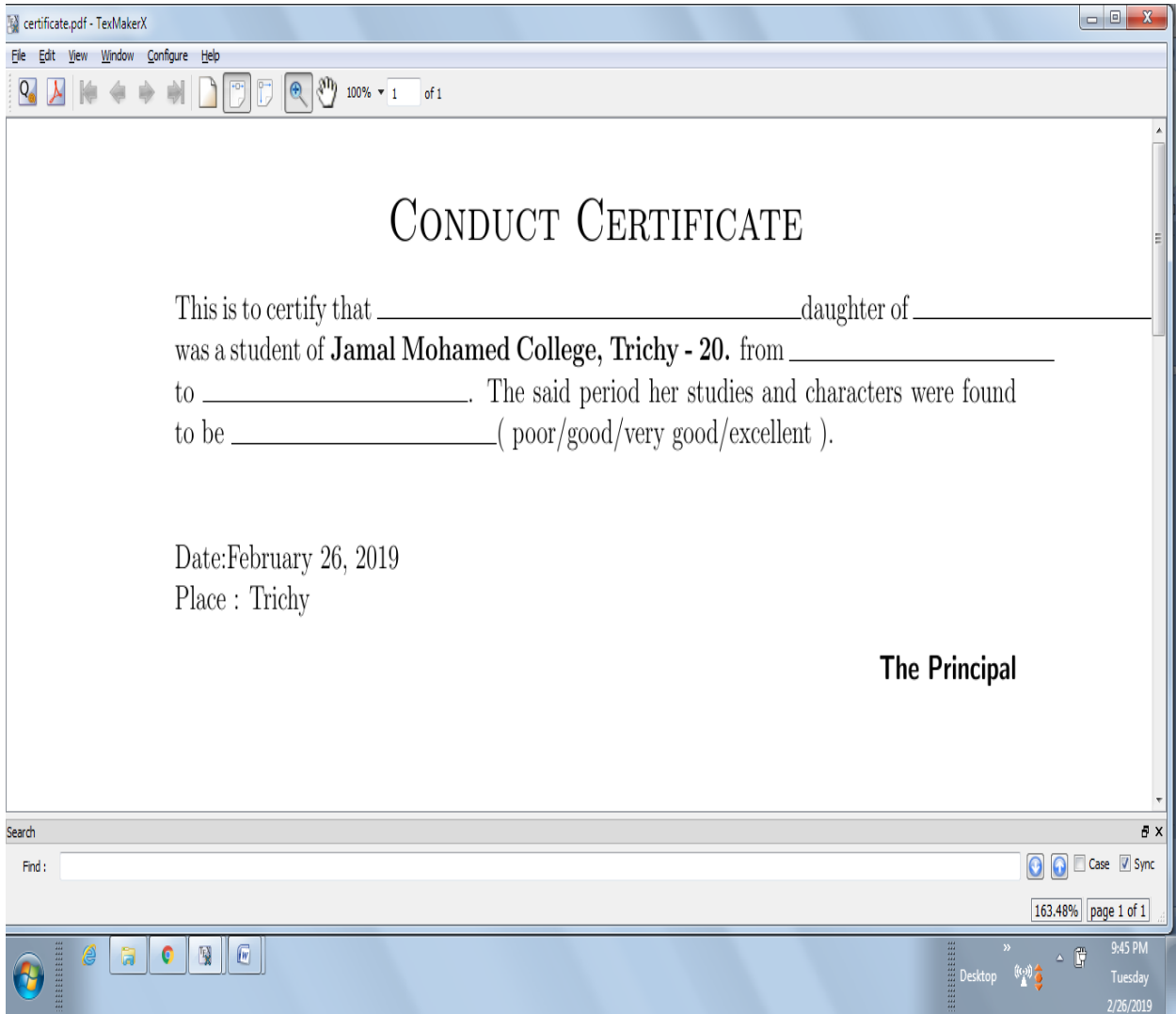
Ex.No : 03

Conduct Certificate

Date :

```
\documentclass[12pt, letterpaper]{article}
\usepackage[left = 1.25in, right = 1.00in, top = 1.00cm, bottom = 1.00cm]{geometry}
\begin{document}
\begin{center}
\scshape\LARGE Conduct Certificate

\end{center}
\noindent
This is to certify that \rule{8cm}{0.4pt} daughter of \rule{8cm}{0.4pt} was a student of
\textbf{Jamal Mohamed College, Trichy - 20.} from \rule{5cm}{0.4pt} to \rule{5cm}{0.4pt}.
The said period her studies and characters were found to be \rule{5cm}{0.4pt}\big(
poor/good/very good/excellent \big).\
\\
\\
Date: {\today}\
Place : Trichy
\begin{flushright}
\sffamily\textbf{The Principal}
\end{flushright}
\end{document}
```



CONDUCT CERTIFICATE

This is to certify that _____ daughter of _____
was a student of **Jamal Mohamed College, Trichy - 20.** from _____
to _____. The said period her studies and characters were found
to be _____ (poor/good/very good/excellent).

Date:February 26, 2019
Place : Trichy

The Principal

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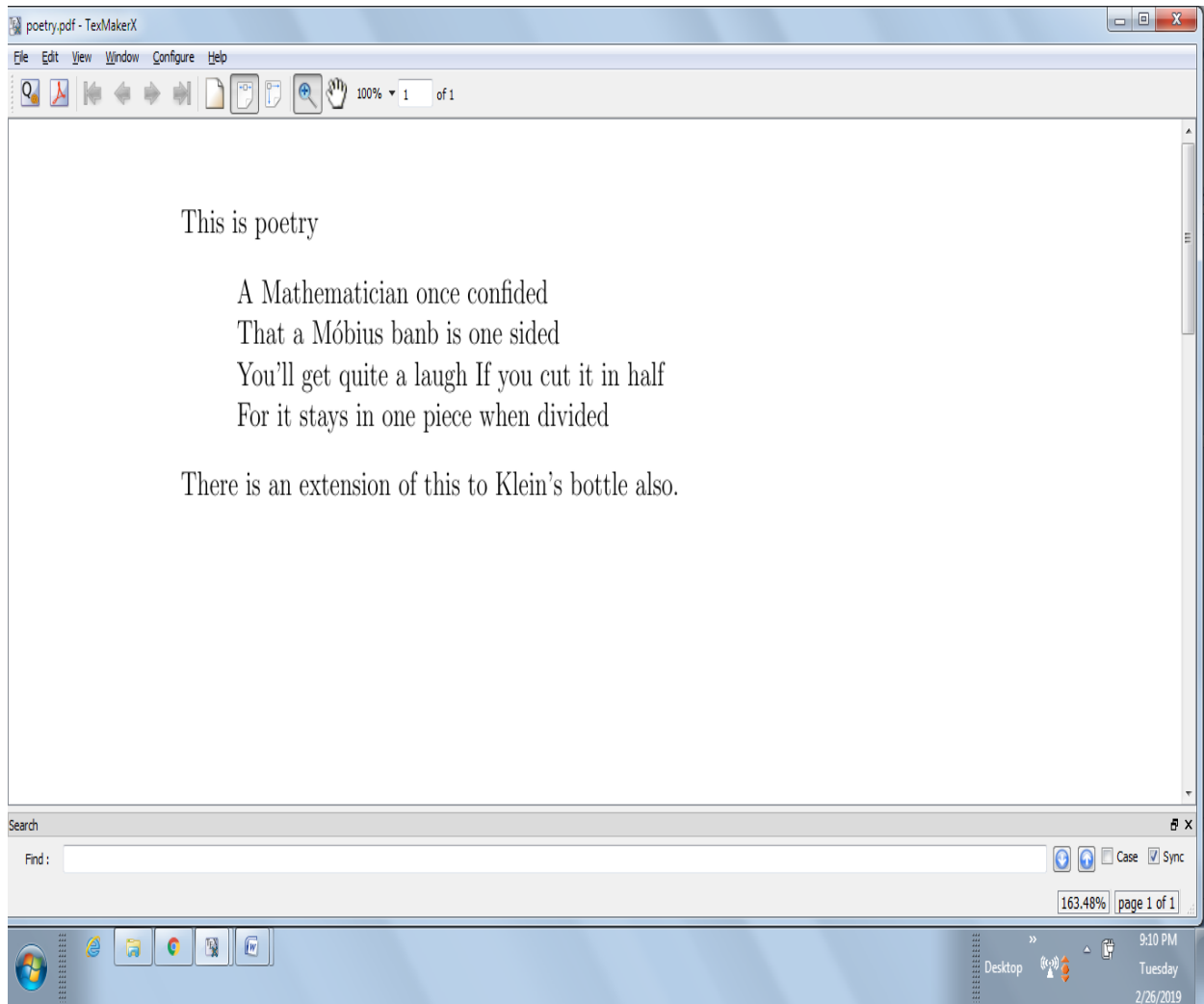
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Ex.No : 04

Poetry

Date :

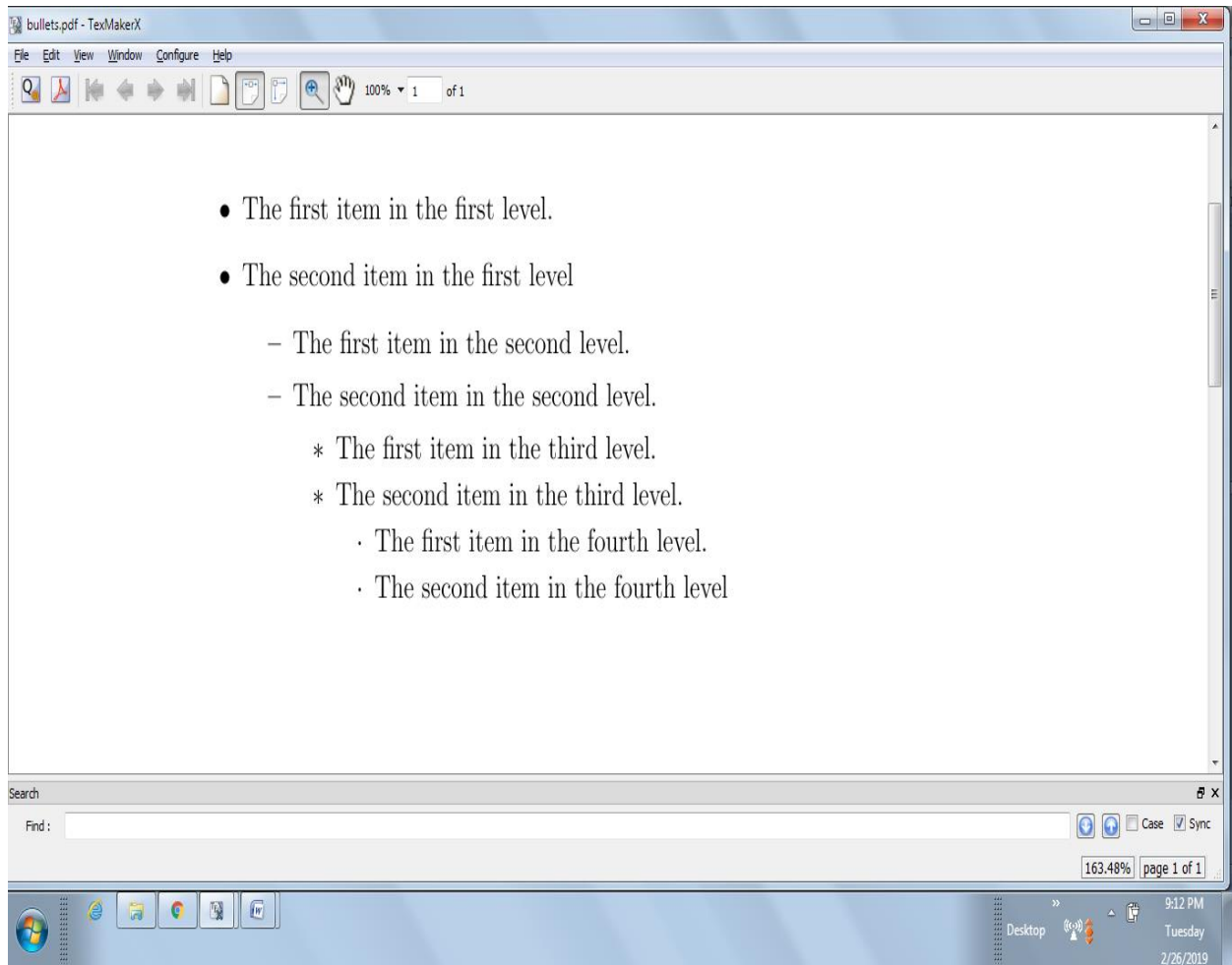
```
\documentclass[12pt, letterpaper]{article}
\usepackage[left = 1.25in, right = 1.00in, top = 1.00cm, bottom = 1.00cm]{geometry}
\begin{document}
\noindent This is poetry
\begin{verse}
A Mathematician once confided\\
That a M\obius banb is one sided\\
You'll get quite a laugh\
If you cut it in half\
For it stays in one piece when divided
\end{verse}
There is an extension of this to Klein's bottle also.
\end{document}
```



Ex.No : 05 Labeled Items Containing Bullets, Dashes, Stars and Dots

Date :

```
\documentclass[12pt]{article}
\usepackage[left = 1.25in, right = 1.00in, top = 1.00cm, bottom = 1.00cm]{geometry}
\begin{document}
\underline{The bullets, dashes, stars and dots for labelled items}
\vspace*{2cm}
\begin{itemize}
\item The first item in the first level.
\item The second item in the first level
\begin{itemize}
\item The first item in the second level.
\item The second item in the second level.
\begin{itemize}
\item The first item in the third level.
\item The second item in the third level.
\begin{itemize}
\item The first item in the fourth level.
\item The second item in the fourth level
\end{itemize}
\end{itemize}
\end{itemize}
\end{itemize}
\end{itemize}
\end{document}
```



Ex.No : 06

Statistical Table

Date :

```
\documentclass[12pt,legalpaper]{article}
\usepackage{multirow}
\begin{document}
\begin{center}
\textbf{\underline{Statistical Table}}\\
\vspace{2cm}
\begin{tabular}{|c||c|c|}
\hline
\multicolumn{2}{|c|}{D} & $P_u$ & $\sigma_N$\\
\multicolumn{2}{|c|}{(in)} & (lbs) & (psi)\\
\hline
\multirow{3}{1cm}{5} & test1 & 282 & 38.00\\
\cline{2-4}
& test2 & 287 & 38.27\\
\cline{2-4}
& test 3 & 230 & 30.67\\
\hline
\multirow{3}{1cm}{10} & test1 & 430 & 28.67\\
\cline{2-4}
& test 2 & 431 & 28.87\\
\cline{2-4}
& & & \end{tabular}
```

&test 3 &431 &28.73\\

\hline

\end{tabular}

\end{center}

\end{document}

statistical table.pdf - TexMakerX

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Statistical Table

	D (in)	P_u (lbs)	σ_N (psi)
5	test1	282	38.00
	test2	287	38.27
	test 3	230	30.67
10	test1	430	28.67
	test 2	431	28.87
	test 3	431	28.73

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Ex.No : 07

Mathematical Formulas

Date :

```
\documentclass[12pt]{article}
\usepackage{amsmath}
\begin{document}
\begin{center}
\underline{\normalsize Mathematical Formulas}
\end{center}
\begin{align}
\intertext{\underline{Arithmetic mean:}}
\bar{x} &= \frac{\sum\limits_{i=1}^n x_i}{n}
\intertext{\underline{Standard deviation: }}
\sigma &= \sqrt{\frac{\sum\limits_{i=1}^n (x_i - \bar{x})^2}{n}}
\intertext{where $\sum x_i$ = sum of observations and \newline $n$ = number of observations}
\intertext{\underline{Karl Pearson's Correlation Co-efficient :}}
r_{xy} &= \frac{N\sum x_i y_i - \sum x_i \sum y_i}{
\sqrt{N\sum x_i^2 - (\sum x_i)^2} \sqrt{N\sum y_i^2 - (\sum y_i)^2} }
\end{align}
where
N = number of pairs\\
$\sum x_i y_i$ = sum of the product of pairs\\
$\sum x_i$ = sum of $x$\\
$\sum x_i^2$ = sum of squared $x$\\
$\sum y_i$ = sum of $y$\\
$\sum y_i^2$ = sum of squared $y$\\
\end{document}
```

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Mathematical Formulas

Arithmetic mean:

$$\bar{x} = \frac{\sum_{i=1}^n x_i}{n} \quad (1)$$

Standard deviation:

$$\sigma = \sqrt{\frac{\sum_{i=1}^n (x_i - \bar{x})^2}{n}} \quad (2)$$

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where $\sum x_i$ = sum of observations and
n = number of observations

Karl Pearson's Correlation Co-efficient :

$$r_{xy} = \frac{N \sum x_i y_i - \sum x_i \sum y_i}{\sqrt{N \sum x_i^2 - (\sum x_i)^2} \sqrt{N \sum y_i^2 - (\sum y_i)^2}} \quad (3)$$

where N = number of pairs
 $\sum x_i y_i$ = sum of the product of pairs
 $\sum x_i$ = sum of x
 $\sum x_i^2$ = sum of squared x
 $\sum y_i$ = sum of y
 $\sum y_i^2$ = sum of squared y

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Ex.No : 08

System of Equations and its Matrix Form

Date :

```
\documentclass{article}
```

```
\usepackage{amsmath}
```

```
\begin{document}
```

The system of equations

```
\begin{align*}
```

$$x + y - z = 1$$

$$x - y + z = -1$$

$$x + y + z = 1$$

```
\end{align*}
```

can be written in the matrix terms as

```
\begin{equation*}
```

```
\begin{pmatrix}
```

$$1 \quad 1 \quad -1$$

$$1 \quad -1 \quad 1$$

$$1 \quad 1 \quad 1$$

```
\end{pmatrix}
```

```
\begin{bmatrix}
```

$$x$$

$$y$$

$$z$$

```
\end{bmatrix}
```

```
= \begin{pmatrix}
```

$$1$$


```

1\\
1
\end{pmatrix}
\end{equation*}
\begin{align*}
Determinant\ \Delta &=
\begin{vmatrix}
1 & 1 & -1\\
1 & -1 & 1\\
1 & 1 & 1
\end{vmatrix} \\
&= 1(-1-1)-1(1-1)-1(1+1) \\
&= -2 -0-2 \\
&= -4 \neq 0
\end{align*} \\
Here the matrix
\begin{pmatrix}
1 & 1 & -1 \\
1 & -1 & 1 \\
1 & 1 & 1
\end{pmatrix}
is invertible
\end{document}

```

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The system of equations

$$\begin{aligned}x + y - z &= 1 \\x - y + z &= -1 \\x + y + z &= 1\end{aligned}$$

can be written in the matrix terms as

$$\begin{pmatrix} 1 & 1 & -1 \\ 1 & -1 & 1 \\ 1 & 1 & 1 \end{pmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{pmatrix} 1 \\ -1 \\ 1 \end{pmatrix}$$

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$$\begin{aligned}Determinant \Delta &= \begin{vmatrix} 1 & 1 & -1 \\ 1 & -1 & 1 \\ 1 & 1 & 1 \end{vmatrix} \\&= 1(-1-1) - 1(1-1) - 1(1+1) \\&= -2 - 0 - 2 \\&= -4 \neq 0\end{aligned}$$

Here the matrix $\begin{pmatrix} 1 & 1 & -1 \\ 1 & -1 & 1 \\ 1 & 1 & 1 \end{pmatrix}$ is invertible

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Ex.No : 09

Binomial Expansion and Christoffel's Symbols

Date :

```
\documentclass[12pt]{article}
```

```
\usepackage{amsmath}
```

```
\title{Program for Binomial Expansion and Christoffel Symbol}
```

```
\date{}
```

```
\begin{document}
```

```
\maketitle
```

Proportional integral, derivative controller is most popular in industry. It has three tuning parameters : K , τ_i , and τ_d . The integral mode includes the term $\int_0^1(t)dt$.

```
\begin{align}
```

```
u(t) &= K\left\{e(t) + \frac{1}{\tau_i}\int_0^1te(t)dt +
```

```
\tau_d\frac{de(t)}{dt}\right\}
```

```
\intertext{The binomial expansion is }
```

```
(x+y)^n &= \sum\limits_{i=0}^n\binom{n}{k} x^{n-k} y^k \nonumber \\\
```

```
&= \sum\limits_{i=0}^n\frac{n!}{k!(n-k)!} x^{n-k} y^k
```

```
\end{align}
```

```
\begin{align*}
```

```
(x+y)^n &= \sum\limits_{i=0}^n\binom{n}{k} x^{n-k} y^k \\\
```

```
&= \sum\limits_{i=0}^n\frac{n!}{k!(n-k)!} x^{n-k} y^k
```

```
\end{align*}
```

```
\end{document}
```

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Program for Binomial Expansion and Christoffel Symbol

Proportional integral, derivative controller is most popular in industry. It has three tuning parameters : K , τ_i , and τ_d . The integral mode includes the term $\int_0^1()dt$.

$$u(t) = K \left\{ e(t) + \frac{1}{\tau_i} \int_0^1 te(t)dt + \tau_d \frac{de(t)}{dt} \right\} \quad (1)$$

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The binomial expansion is

$$(x + y)^n = \sum_{i=0}^n \binom{n}{k} x^{n-k} y^k$$
$$= \sum_{i=0}^n \frac{n!}{k!(n-k)!} x^{n-k} y^k \quad (2)$$
$$(x + y)^n = \sum_{i=0}^n \binom{n}{k} x^{n-k} y^k$$
$$= \sum_{i=0}^n \frac{n!}{k!(n-k)!} x^{n-k} y^k$$

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Ex.No : 10

Figure Inclusion

Date :

```
\documentclass{article}
\usepackage{graphicx}
\graphicspath{{c:/users/public/}}
\begin{document}
\Large \textbf{Figure Inclusion}
\begin{figure}[h]
\centering
\caption{Dress}
\includegraphics[width = 5cm, height= 5cm]{dress}
\end{figure}
\end{document}
```


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Figure Inclusion

Figure 1: Dress



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Desktop

The image shows a screenshot of the TexMakerX application window. The window title is "p10.pdf - TexMakerX". The menu bar includes "File", "Edit", "View", "Window", "Configure", and "Help". The toolbar contains various navigation and editing icons, and the status bar shows "100%" zoom and "1 of 1" pages. The main content area displays the text "Figure Inclusion" in a large serif font, followed by the caption "Figure 1: Dress" in a smaller serif font. Below the caption is a rectangular image of a teal-colored, short-sleeved, knee-length dress with a pleated skirt, set against a light gray background. At the bottom of the window, there is a search bar with the text "Search" and "Find :". The system tray at the bottom right shows the time "9:37 PM", the date "Tuesday, 2/26/2019", and the desktop name "Desktop".

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File Edit View Window Configure Help


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Contents

No TOC

Figure Inclusion

Figure 1: Dress



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Desktop

The image shows a screenshot of the TexMakerX application window. The window title is "p10.pdf - TexMakerX". The menu bar includes "File", "Edit", "View", "Window", "Configure", and "Help". The toolbar shows navigation and search icons, with a zoom level of "100%" and "1 of 1" pages. On the left, a "Contents" pane shows "No TOC". The main document area displays the text "Figure Inclusion" in a large serif font, followed by "Figure 1: Dress" in a smaller font. Below the text is a square image of a blue, short-sleeved, knee-length dress with a gathered waist. At the bottom of the window, there is a search bar with "Find:" and a search button. To the right of the search bar are checkboxes for "Case" and "Sync", and a status bar showing "148.28% | page 1 of 1". The Windows taskbar at the very bottom shows the Start button, several application icons, and the system tray with the time "9:01 PM", date "Tuesday 2/26/2019", and "Desktop" label.