

ipy·samplemainraw_s*ample*

24. Confidence Intervals - Practicals

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1 Sample

This is just a sample notebook

1.1 Sample Sub Section

```
In [1]: print(3+4)
```

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Issues:

The `subsubsections` are not numbered. At this time, it looks like problem is at least outside the scope of ipython as even raw tex file shows this problem. Try limiting your sections to 2 levels only. That is till `##` not beyond to be on safe side.

1.2 this subsection is numbered

1.2.1 this subsubsection is not numbered

1.3 Using Latex Equations

Latex equations cause few issues because Mathjax used by ipython is not fully latex compliant.

Issues:

1. Mathjax is lineant on not using brackets to cover multi digit subscripts while latex is not. $\mu_{\widehat{p}}$ will be converted properly in notebook while gives error in converted tex file. Always wrap subscripts fully. For eg, $\mu_{\{\widehat{p}\}}$ will work in tex as well.
2. If you use `begin{equation}`, need not embrace further with `$$` which will only create error in converted tex.
3. `begin{equation}` does not allow multi line, so use `begin{aligned}` inside.
4. Double slash for new line will not work unless the set of equations are wrapped within `\begin{align}`

References: [1](#)

Demo:

Set of latex equations which successfully works in converted tex as well.

Raw:

```
$$
\color{blue}{
\begin{aligned}
&\text{Random Variable} \ \ \ \widehat{p} = \overline{\widehat{Y}} \ \ \
&\mu_{\widehat{p}} = \mu{\overline{\widehat{Y}}} \ \ \
&\sigma_{\widehat{p}} = \sigma(\overline{\widehat{Y}})
\end{aligned}
}
$$
```

Output:

$$\begin{aligned} \text{Random Variable } \widehat{p} &= \overline{\widehat{Y}} \\ \mu_{\widehat{p}} &= \mu_{\overline{\widehat{Y}}} \\ \sigma_{\widehat{p}} &= \sigma(\overline{\widehat{Y}}) \end{aligned}$$

Raw:

```

$$
\begin{equation}
\color{blue}{
\begin{aligned}
&\text{Random Variable } \widehat{p} = \overline{\widehat{Y}} \nonumber \\
&\mu_{\widehat{p}} = \mu_{\overline{\widehat{Y}}} \nonumber \\
&\sigma_{\widehat{p}} = \sigma(\overline{\widehat{Y}}) \nonumber
\end{aligned}
}
\end{equation}
$$

```

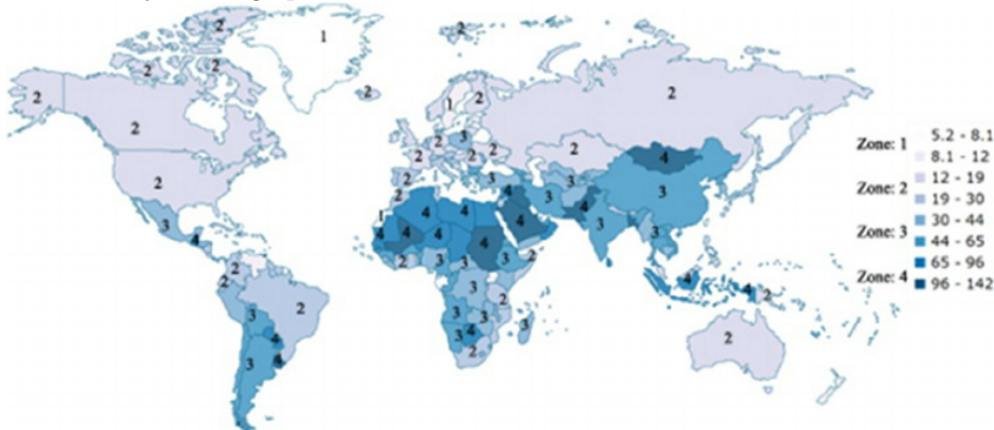
Output (note even if I give nonumber, equation is numbered!):

$$\begin{aligned} \text{Random Variable } \widehat{p} &= \overline{\widehat{Y}} \\ \mu_{\widehat{p}} &= \mu_{\overline{\widehat{Y}}} \\ \sigma_{\widehat{p}} &= \sigma(\overline{\widehat{Y}}) \end{aligned} \tag{1}$$

1.4 Using Attachments

Issue:

Using a `backslash` and a `space` and then a blank line to avoid attachments becoming floats and placed out of section. This is to be done after every attachment. Else they simply float around. This is a latex issue. Do not worry, they will not appear in latex though they appear here. If `nbconvert` did not use `figure` and instead only `includegraphics` this issue could have been avoided. Got this hint from [here](#)



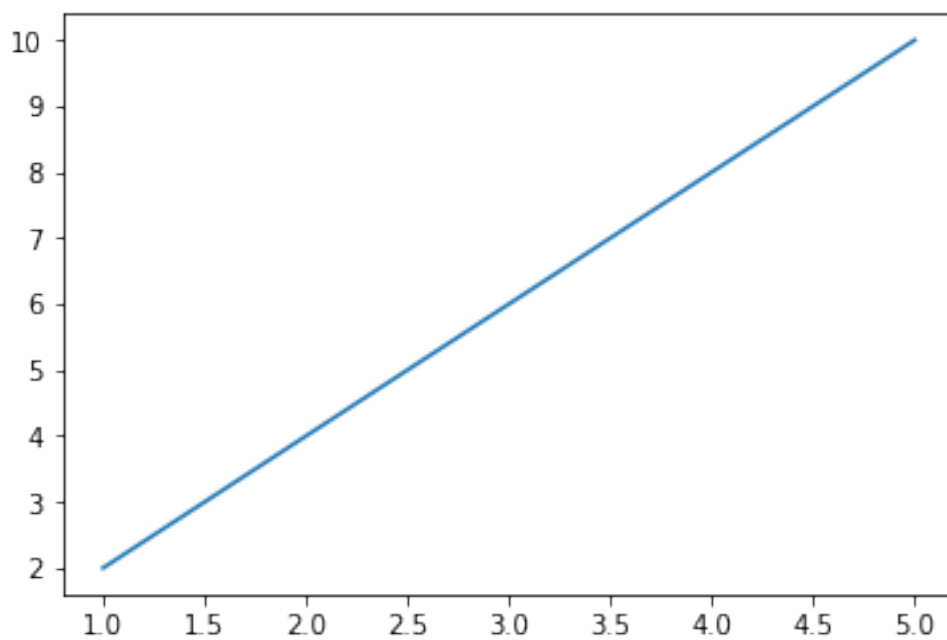


1.5 Using Code

This so far seem to have no problems

```
In [3]: %matplotlib inline
import matplotlib.pyplot as plt

x = [1,2,3,4,5]
y = [2,4,6,8,10]
plt.plot(x,y)
plt.show()
```



1.6 Cross Reference

Sometimes you would want to refer an equation or something in another tex file from here. This is how to do it.

This ?? is a sample cross reference to a section in another raw tex file. This ?? is a sample cross reference to an equation in another raw tex file.

Issue: We need to do this in raw cell as cross references are not realized at nbconvert level. Also using this externaldocument would compile the entire main.tex file currently instead of only the referenced file. This should be investigated why. Its a nuisance for now. Also note the line breaks explicitly given instead of double space or latex break because these are raw cells, so a line break also should be literally given as above (would be clear when you view this document in notebook)