

# R: The premier data analysis and visualization platform

<https://cran.r-project.org/>



## The Comprehensive R Archive Network

### Download and Install R

Precompiled binary distributions of the base system and contributed packages, **Windows and Mac** users most likely want one of these versions of R:

- [Download R for Linux](#)
- [Download R for \(Mac\) OS X](#)
- [Download R for Windows](#)

R is part of many Linux distributions, you should check with your Linux package management system in addition to the link above.

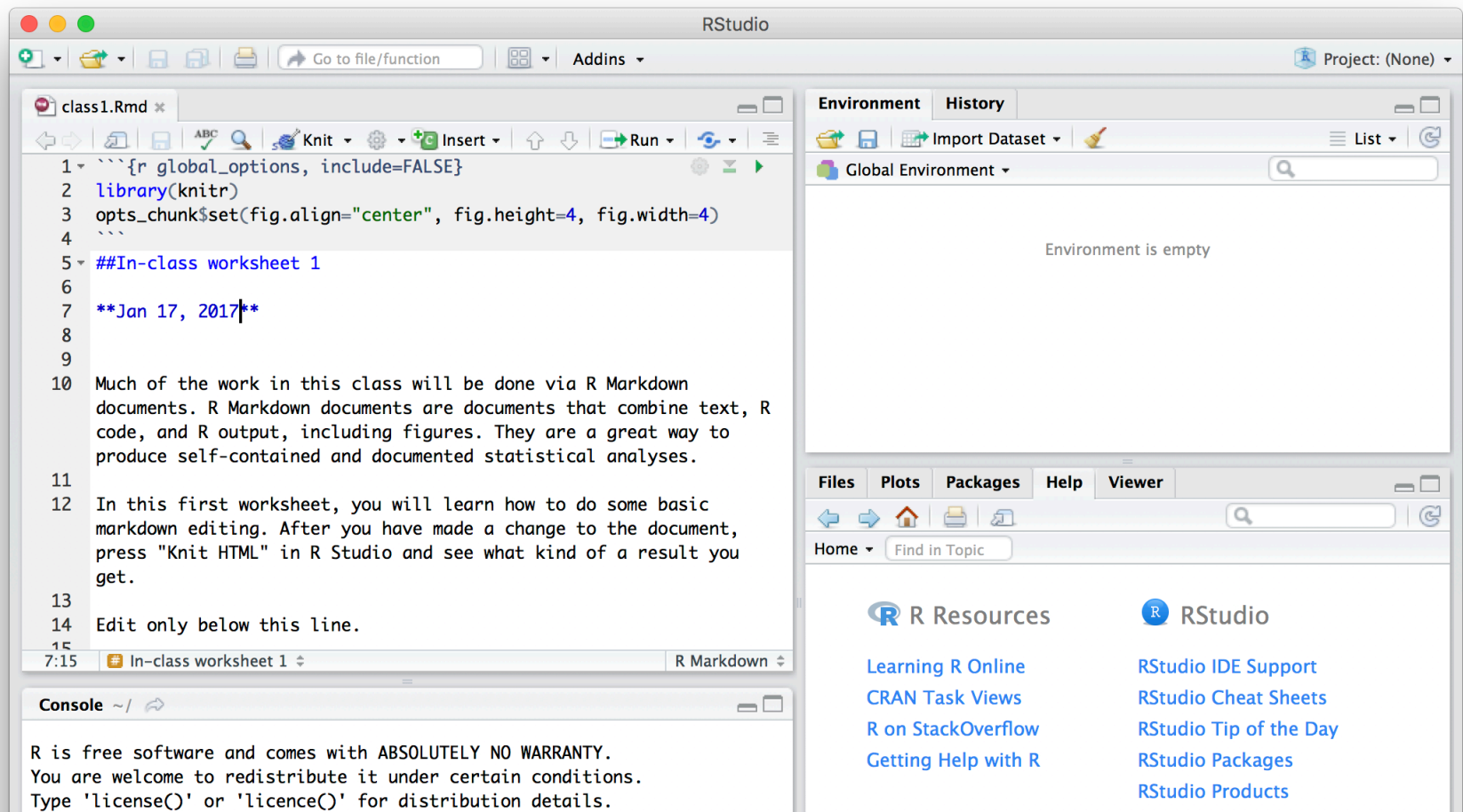
### Source Code for all Platforms

Windows and Mac users most likely want to download the precompiled binaries listed in the upper

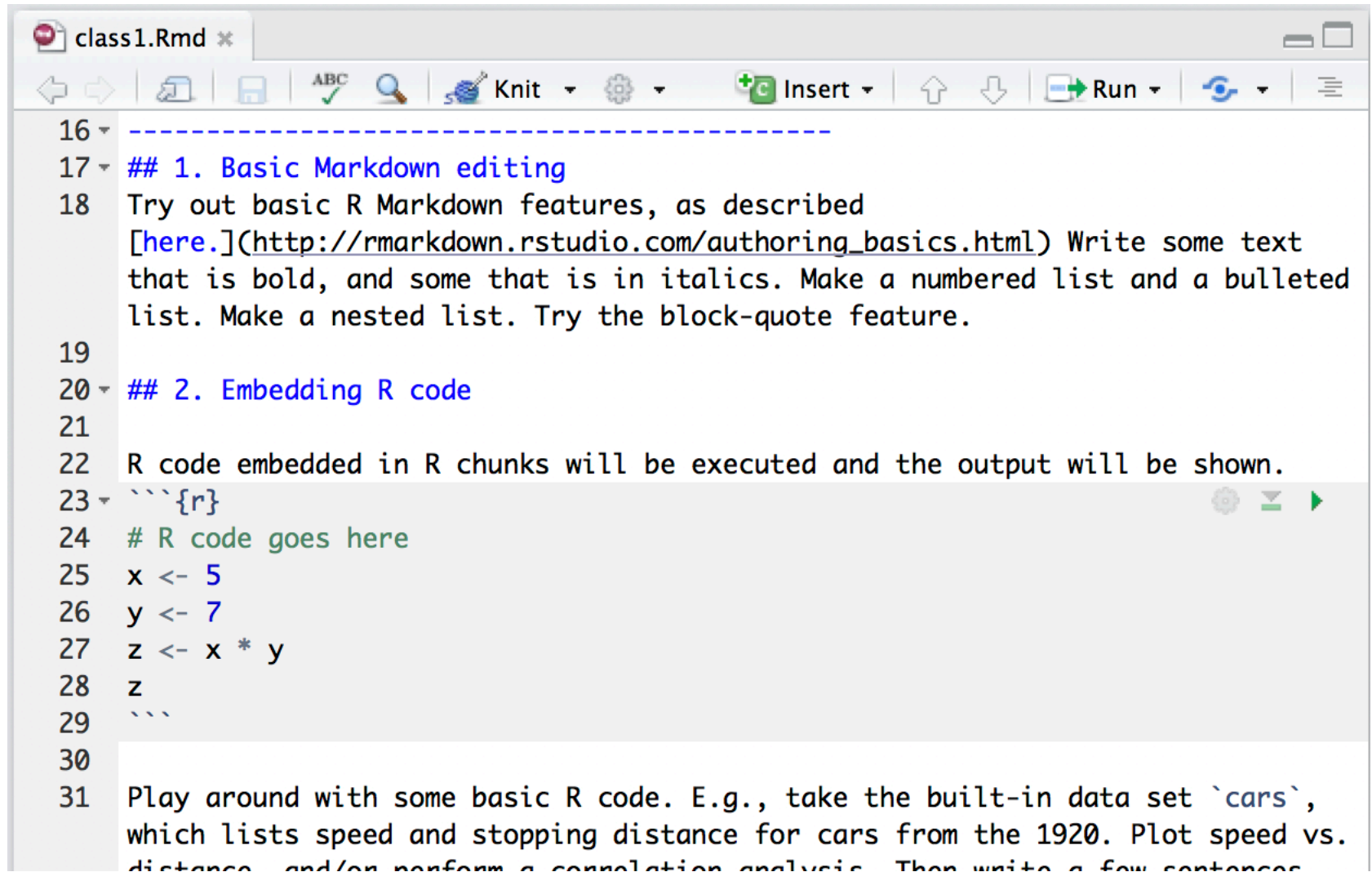
# R Studio:

## A nice user interface for R

<https://www.rstudio.com/products/rstudio/download/>



# R Markdown: Writing documents with embedded R code



```
class1.Rmd *
16 - - - - -
17 ## 1. Basic Markdown editing
18 Try out basic R Markdown features, as described
   [here.](http://rmarkdown.rstudio.com/authoring_basics.html) Write some text
   that is bold, and some that is in italics. Make a numbered list and a bulleted
   list. Make a nested list. Try the block-quote feature.
19
20 ## 2. Embedding R code
21
22 R code embedded in R chunks will be executed and the output will be shown.
23 ```{r}
24 # R code goes here
25 x <- 5
26 y <- 7
27 z <- x * y
28 z
29 ```
30
31 Play around with some basic R code. E.g., take the built-in data set `cars`,
   which lists speed and stopping distance for cars from the 1920. Plot speed vs.
   distance, and/or perform a correlation analysis. Then write a few sentences
```

# R Markdown:

## Writing documents with embedded R code

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### 2. Embedding R code

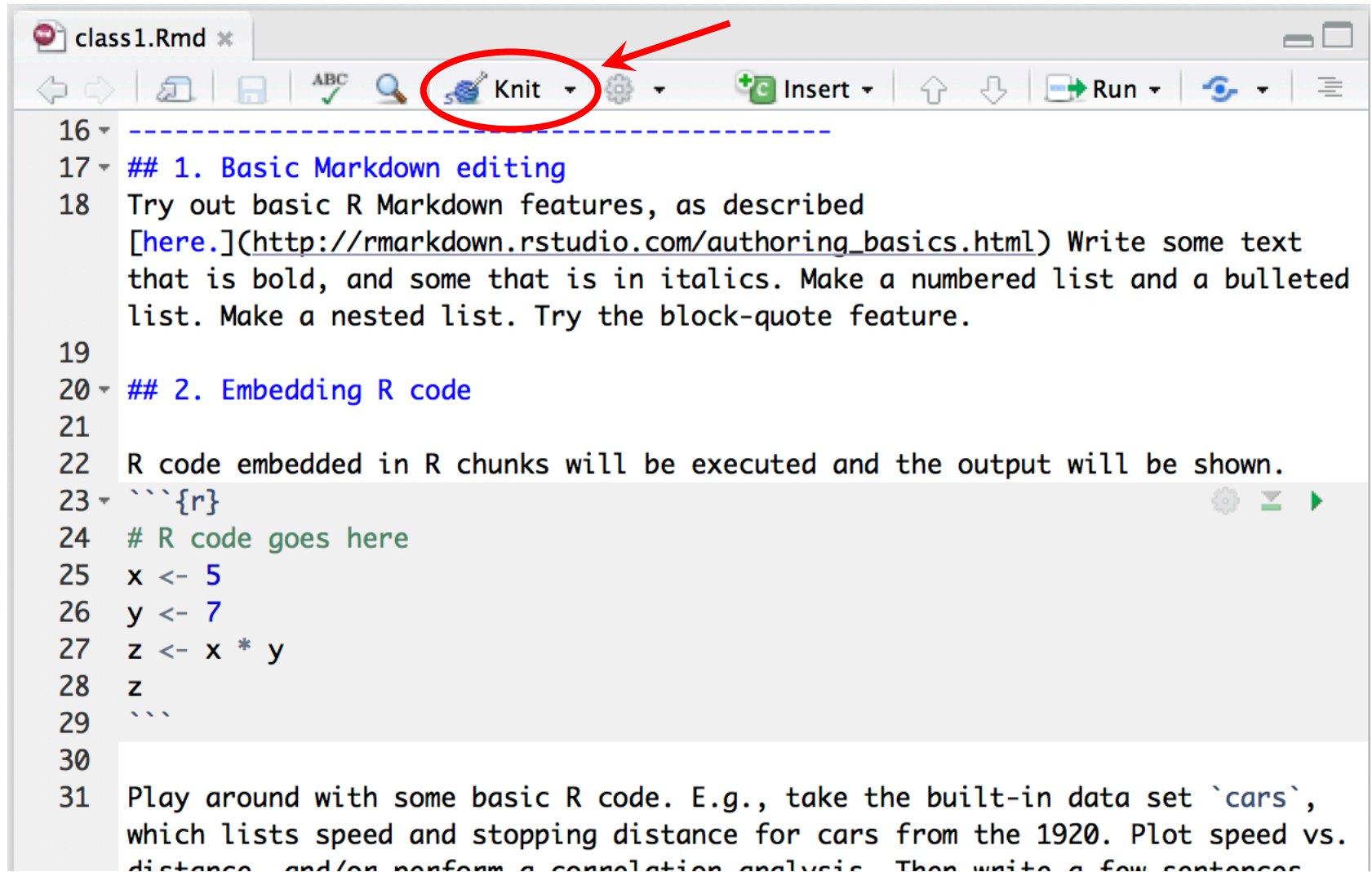
R code embedded in R chunks will be executed and the output will be shown.

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# R code goes here  
x <- 5  
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z <- x * y  
z
```

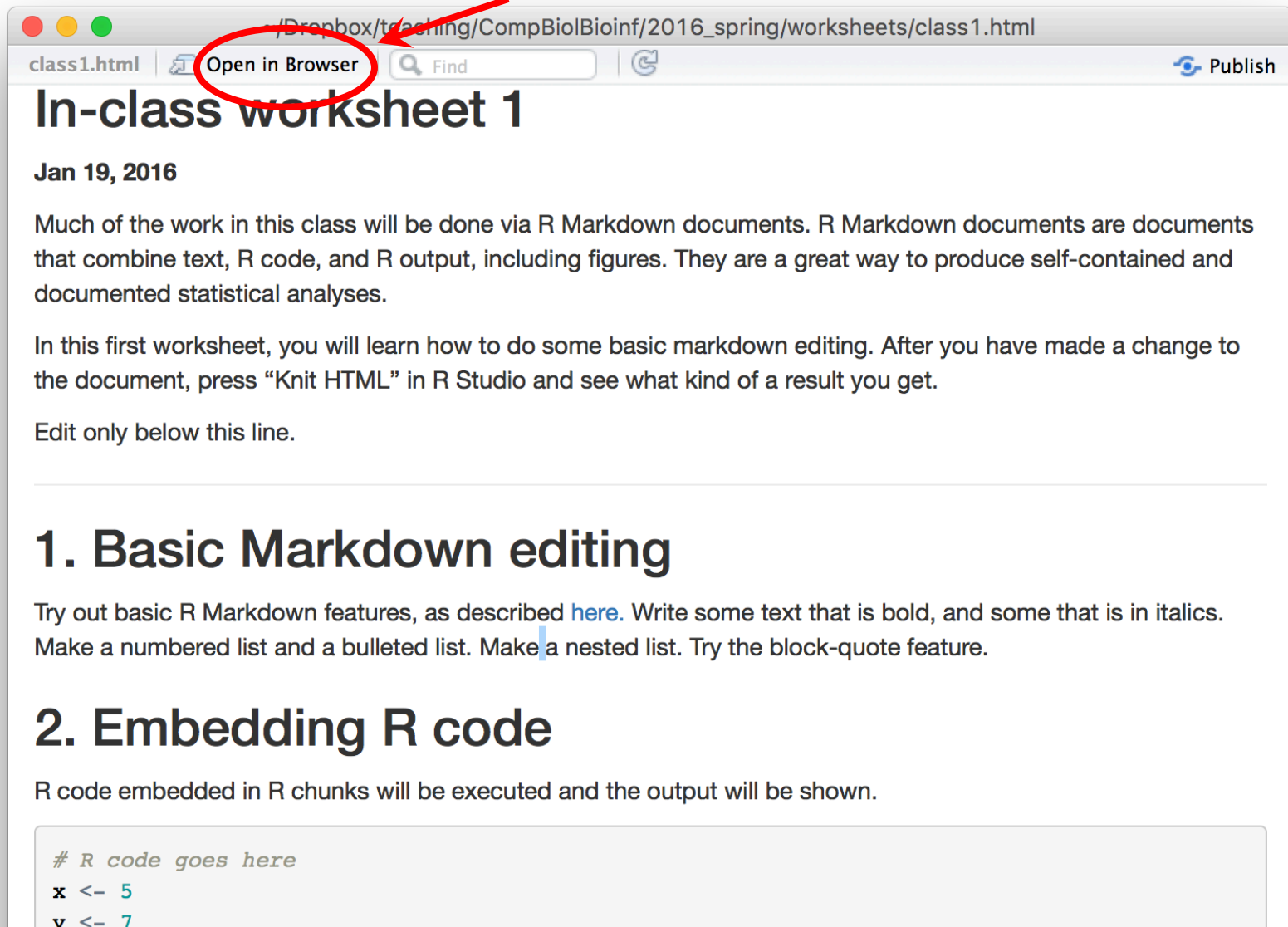
```
## [1] 35
```

Play around with some basic R code. E.g., take the built-in data set `cars`, which lists speed and stopping distance for cars from the 1920. Plot speed vs. distance, and/or perform a correlation analysis. Then write a few sentences describing what you see.

# We convert R Markdown to HTML by “knitting” the Markdown file



# Convert to pdf: knit to HTML, open in browser, print, save as pdf



class1.html Open in Browser Find Publish

## In-class worksheet 1

Jan 19, 2016

Much of the work in this class will be done via R Markdown documents. R Markdown documents are documents that combine text, R code, and R output, including figures. They are a great way to produce self-contained and documented statistical analyses.

In this first worksheet, you will learn how to do some basic markdown editing. After you have made a change to the document, press “Knit HTML” in R Studio and see what kind of a result you get.

Edit only below this line.

---

### 1. Basic Markdown editing

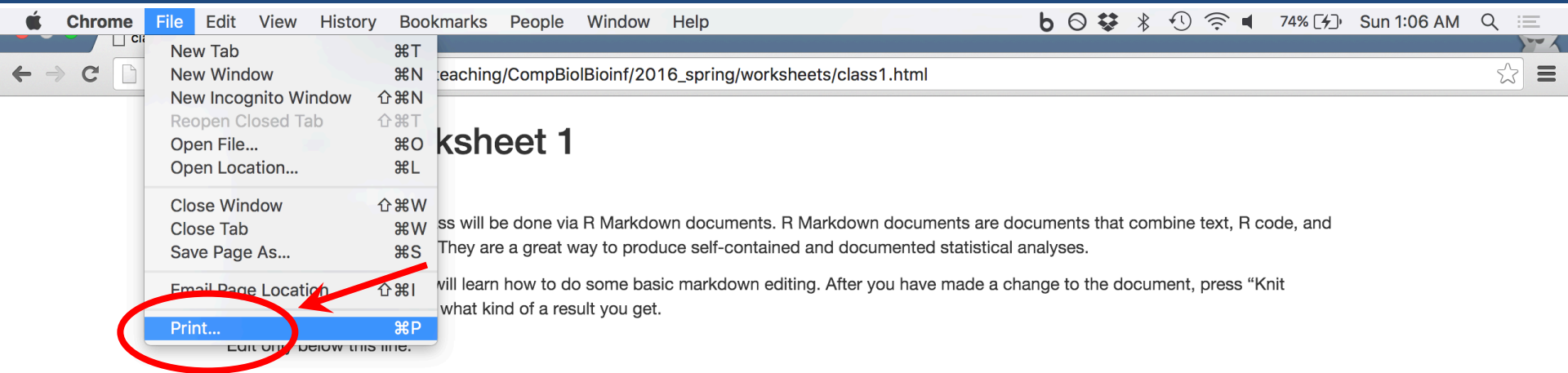
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## 3. If this was easy



# Convert to pdf: knit to HTML, open in browser, print, save as pdf

Print

Total: 1 page

Cancel

Save

Destination



Save as PDF

Change...

Pages



All



e.g. 1-5, 8, 11-13

Layout

Portrait

Paper size

Letter

Margins

Default

Options



Headers and footers



Background graphics

Print using system dialog... (⌘P)

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### 3. If this was easy

If this was easy, use Google to find out how to type-set mathematical formulas inside of R markdown.



# Markdown basics

[http://rmarkdown.rstudio.com/authoring\\_basics.html](http://rmarkdown.rstudio.com/authoring_basics.html)

normal text

*\*italics\**

**\*\*bold\*\***

# Header 1

## Header 2

List:

1. Item 1

2. Item 2

3. Item 3



normal text

*italics*

**bold**

# Header 1

## Header 2

List:

1. Item 1

2. Item 2

3. Item 3

# Markdown basics

Embedded R code will be evaluated and printed

```
```{r}  
head(cars)  
plot(cars$speed, cars$dist)  
```
```



Embedded R code will be evaluated and printed

```
head(cars)
```

```
##   speed dist  
## 1     4    2  
## 2     4   10  
## 3     7    4  
## 4     7   22  
## 5     8   16  
## 6     9   10
```

```
plot(cars$speed, cars$dist)
```

