Answers to Lecture Qs

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```
## Warning: package 'tidyverse' was built under R version 4.0.5
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.1 --
```

```
## v ggplot2 3.3.5     v purrr   0.3.4
## v tibble  3.1.4     v dplyr   1.0.7
## v tidyr   1.1.3     v stringr 1.4.0
## v readr   2.0.1     v forcats 0.5.1
```

```
## Warning: package 'ggplot2' was built under R version 4.0.5
```

```
## Warning: package 'tibble' was built under R version 4.0.5
```

```
## Warning: package 'tidyr' was built under R version 4.0.5
```

```
## Warning: package 'readr' was built under R version 4.0.5
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## Warning: package 'purrr' was built under R version 4.0.5
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## Warning: package 'dplyr' was built under R version 4.0.5
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## Warning: package 'stringr' was built under R version 4.0.5
```

```
## Warning: package 'forcats' was built under R version 4.0.5
```

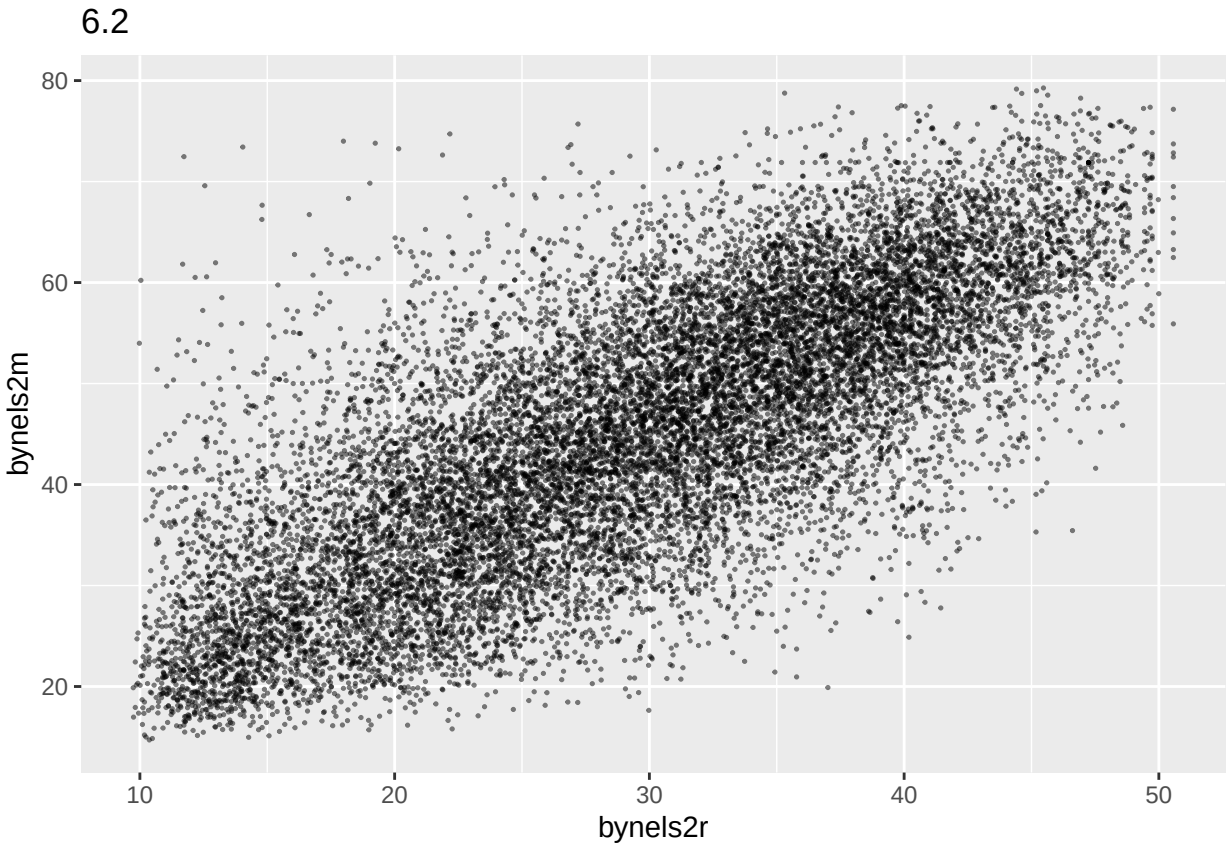
```
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
## Warning: package 'modelr' was built under R version 4.0.5
```

Quick Exercise Create a similar graphic, but this time use reading scores as the independent variable.

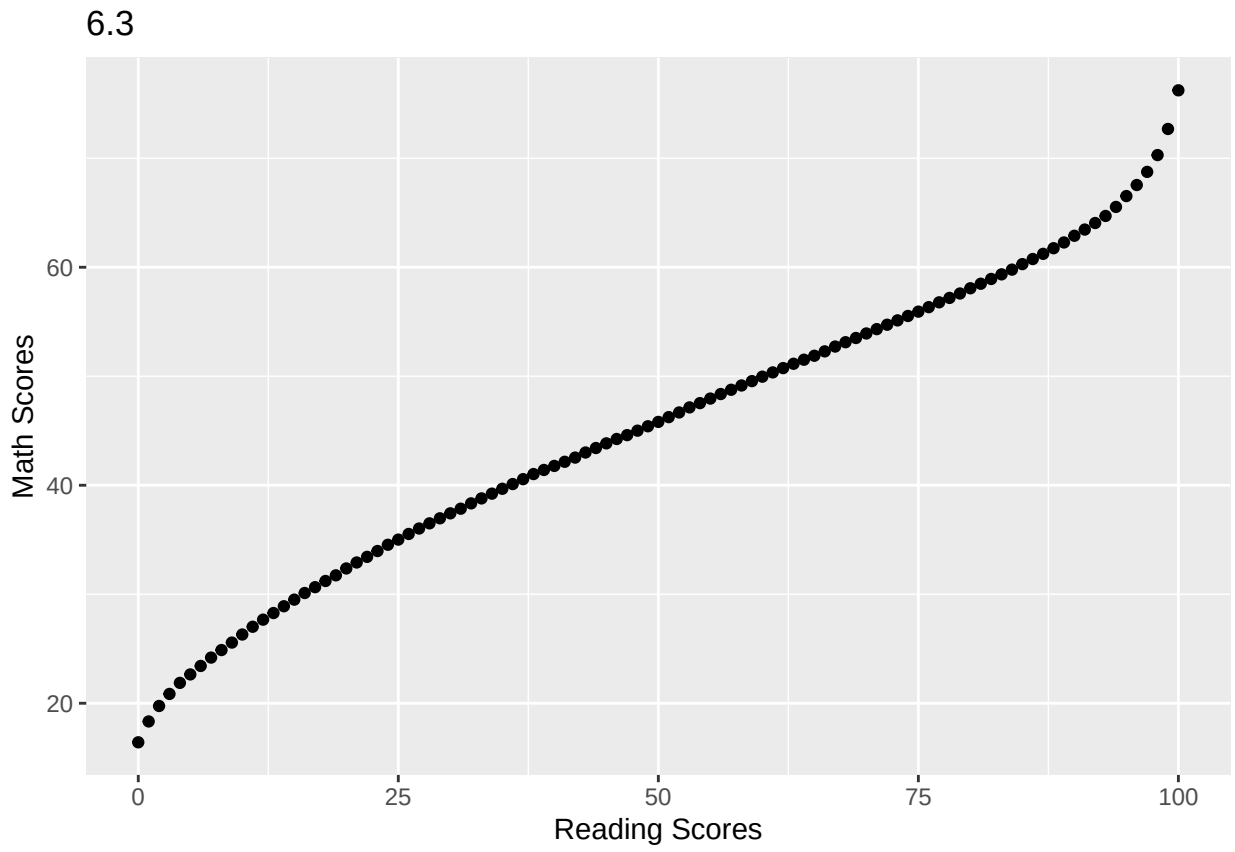
```
#6.2
g1q<-ggplot(data=els,
            aes(x=bynels2r,y=bynels2m))

g1q<-g1q+geom_point(alpha=.5,size=.25) # Add points at x and y

g1q<-g1q+ggtitle("6.2")
g1q
```

```
## Warning: Removed 313 rows containing missing values (geom_point).
```



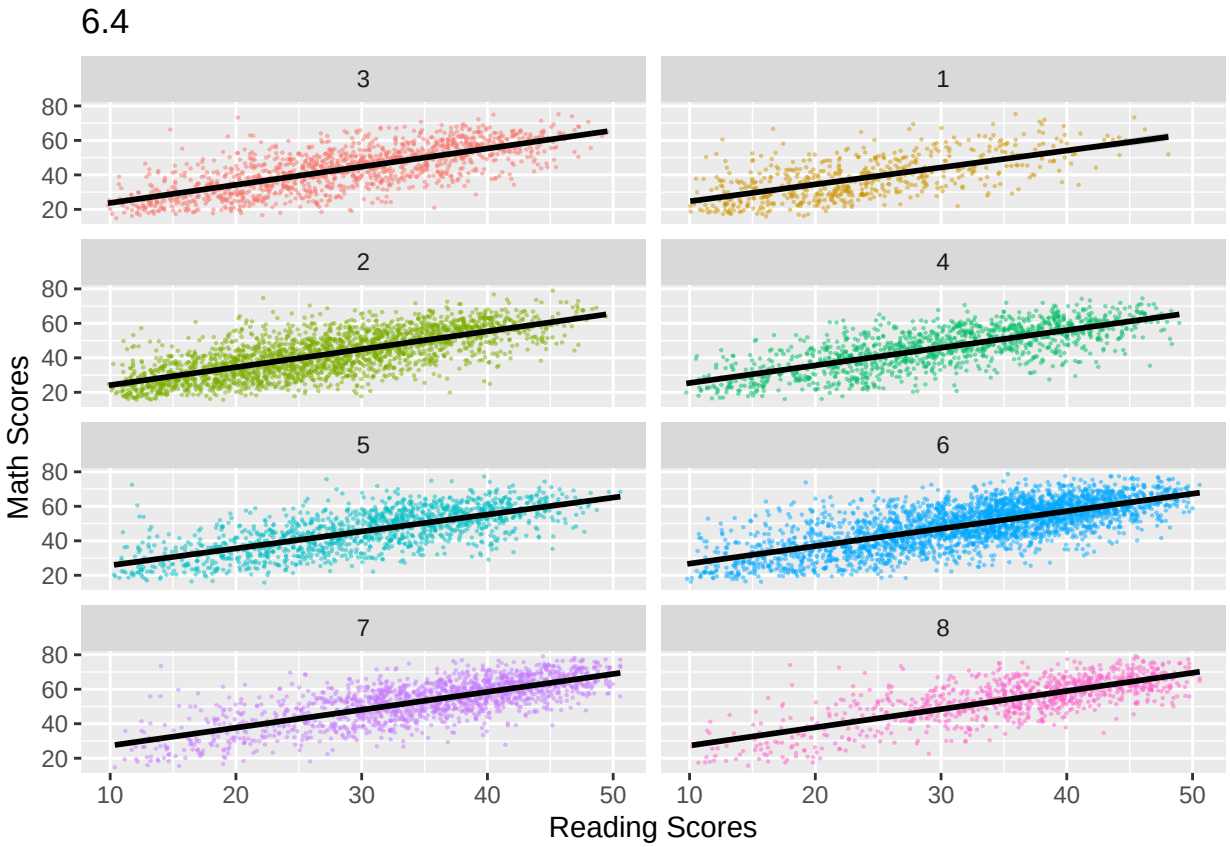

```
#6.3
quick1<-els%>%
  mutate(read_rank=percent_rank(bynels2m)*100)%>%
  mutate(read_rank=round(read_rank))%>%
  group_by(read_rank)%>%
  summarize(math_mean=mean(bynels2m,na.omit=TRUE))

g1aq<-ggplot(quick1,aes(x=read_rank,y=math_mean))

g1aq<-g1aq+geom_point()

g1aq<-g1aq+ylab("Math Scores")+xlab("Reading Scores")
g1aq<-g1aq+ggtitle("6.3")

g1aq
```

```
## Warning: Removed 1 rows containing missing values (geom_point).
```




```
#6.4

els<-els%>%mutate(bypared=fct_reorder(as.factor(bypared),-bynels2m))%>%na.omit()
g5q<-ggplot(els,aes(x=bynels2r,y=bynels2m, color=as.factor(bypared)))
g5q<-g5q+geom_point(alpha=.5,size=.1)
g5q<-g5q+geom_smooth(method="lm",color="black")
g5q<-g5q+facet_wrap(~as.factor(bypared),ncol=2)
g5q<-g5q+xlab("Reading Scores")+ylab("Math Scores")
g5q<-g5q+theme(legend.position="none") #Suppress legend, not needed
g5q<-g5q+ggtitle("6.4")

g5q
```

```
## `geom_smooth()` using formula 'y ~ x'
```




```
#6.5
g1bq<-g1aq+geom_smooth(method="lm") # Add a line
g1bq<-g1bq+ggtitle("6.5")
g1bq
```

```
## `geom_smooth()` using formula 'y ~ x'
```

```
## Warning: Removed 1 rows containing non-finite values (stat_smooth).
```

```
## Warning: Removed 1 rows containing missing values (geom_point).
```

6.5