In [1]:
```
library(tidyverse)
library(ggplot2)
```

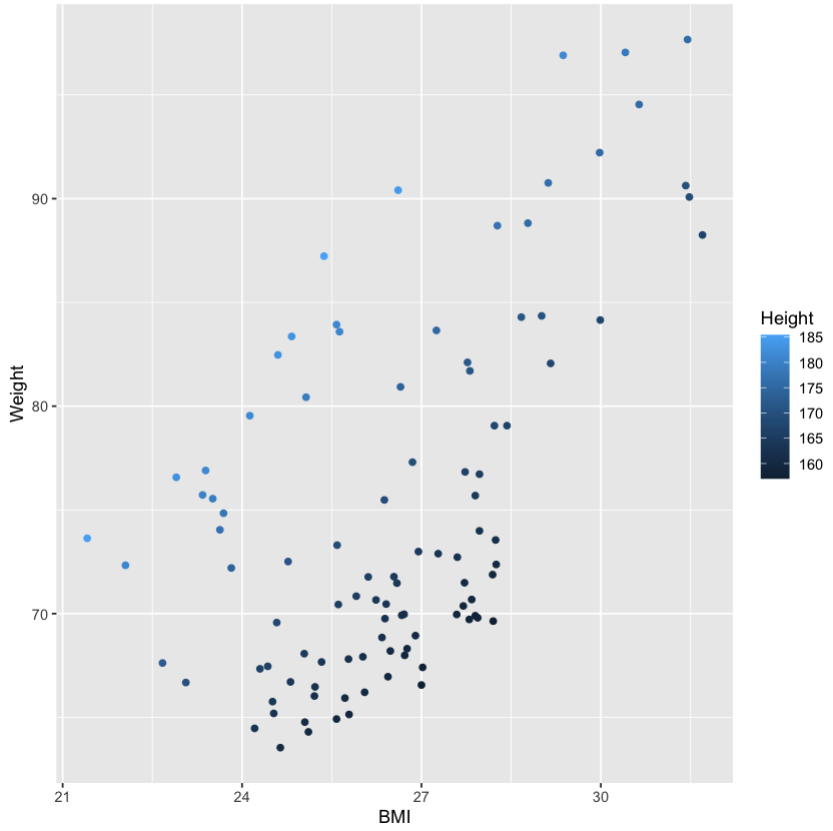
```
── Attaching packages ─────────────────────────────────────── tidyverse 1.3.0
──

✓ ggplot2 3.3.0     ✓ purrr   0.3.3
✓ tibble  3.0.0     ✓ dplyr   0.8.4
✓ tidyr   1.0.2     ✓ stringr 1.4.0
✓ readr   1.3.1     ✓ forcats 0.4.0

── Conflicts ────────────────────────────────────────── tidyverse_conflicts()
──
✖ dplyr::filter() masks stats::filter()
✖ dplyr::lag()    masks stats::lag()
```

In [2]:
```
patients <- read_tsv("patient-data-cleaned.txt")
```

```
Parsed with column specification:
cols(
  ID = col_character(),
  Name = col_character(),
  Sex = col_character(),
  Smokes = col_character(),
  Height = col_double(),
  Weight = col_double(),
  Birth = col_date(format = ""),
  State = col_character(),
  Grade = col_double(),
  Died = col_logical(),
  Score = col_double(),
  Date.Entered.Study = col_date(format = ""),
  Age = col_double(),
  BMI = col_double(),
  Overweight = col_logical()
)
```

1. Draw scatter plot to compare between BMI and Weight using patient-data-cleaned.txt

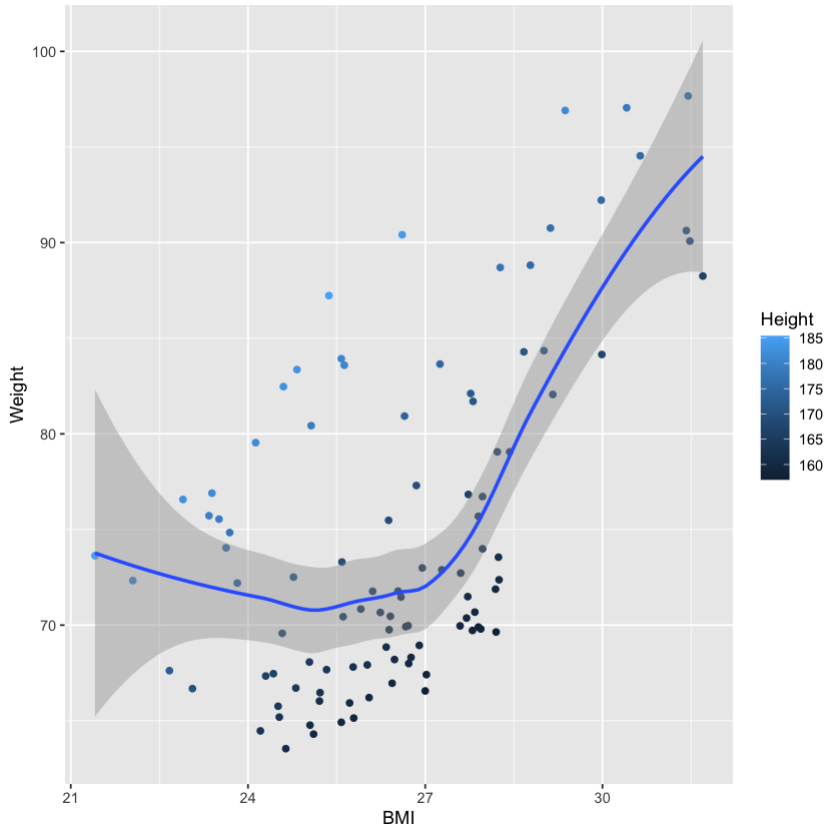
In [3]:
```
ggplot(data = patients, mapping = aes(x = BMI, y = Weight, colour = Height)) +
  geom_point()
```



1. Add fit line into the previous plot usin geom

In [4]:
```
ggplot(data = patients, mapping = aes(x = BMI, y = Weight, colour = Height)) +
  geom_point() +
  geom_smooth()
```

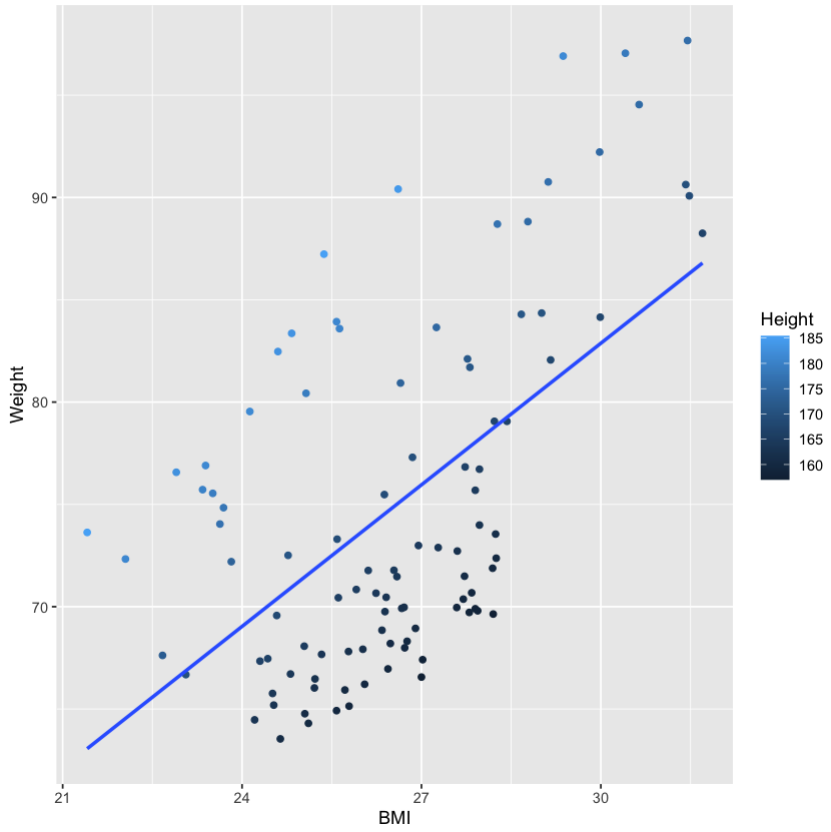
```
`geom_smooth()` using method = 'loess' and formula 'y ~ x'
```



1. Add fit line without standard error bounds using geom_smooth

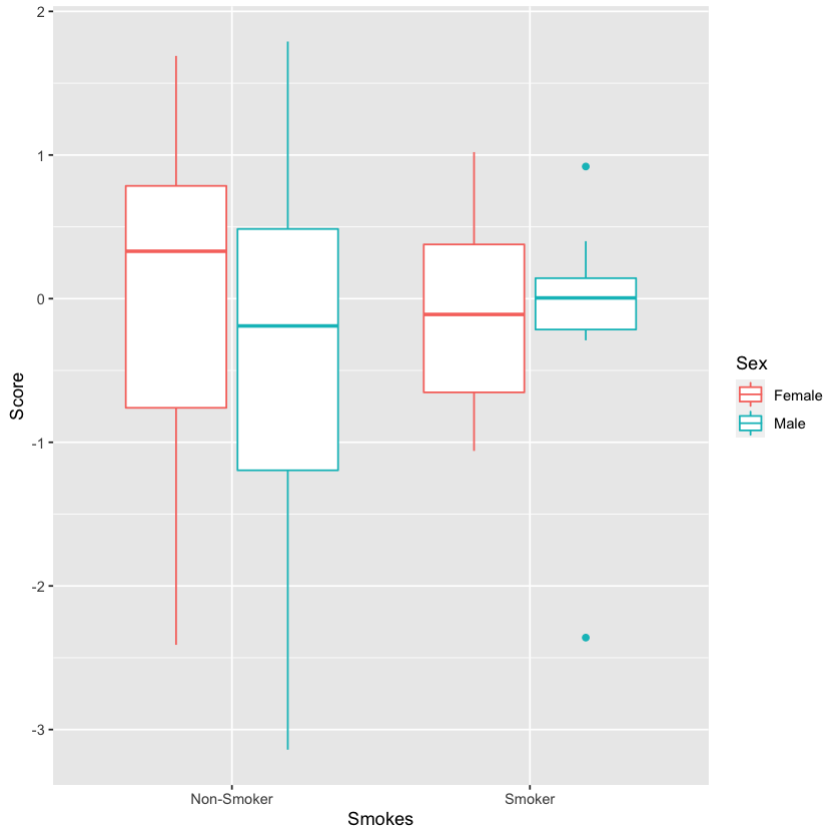
In [5]:
```
ggplot(data = patients, mapping = aes(x = BMI, y = Weight, colour = Height)) +
  geom_point() +
  geom_smooth(method = "lm", se = FALSE)
```

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



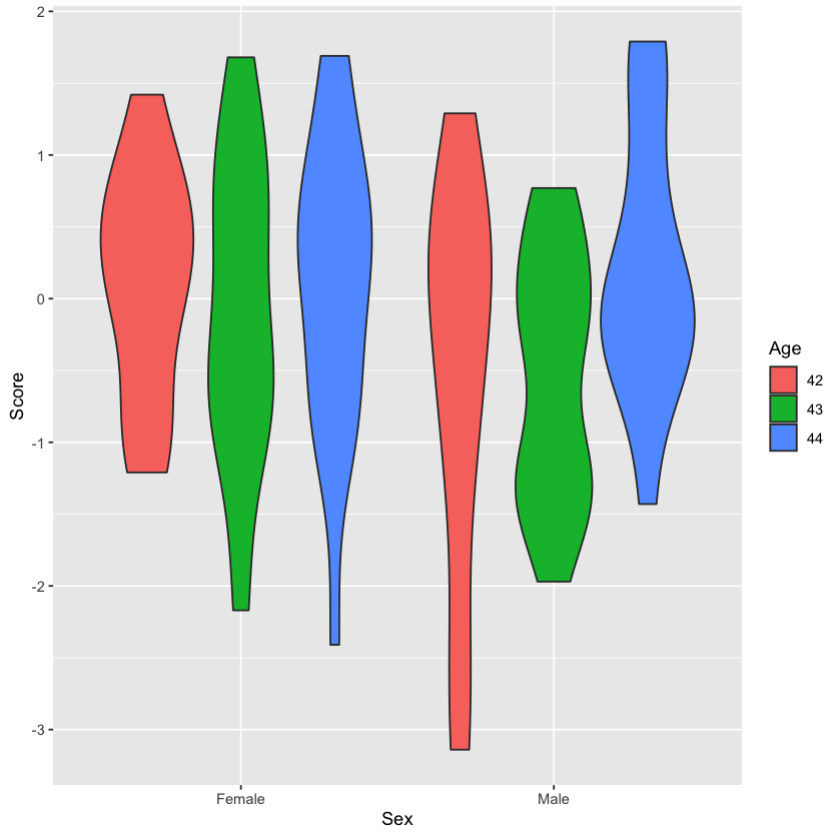
1. Draw box plot to compare scores between smokers and non-smokers

In [6]:
```
ggplot(data = patients, mapping = aes(x = Smokes, y = Score, colour = Sex)) +
  geom_boxplot()
```



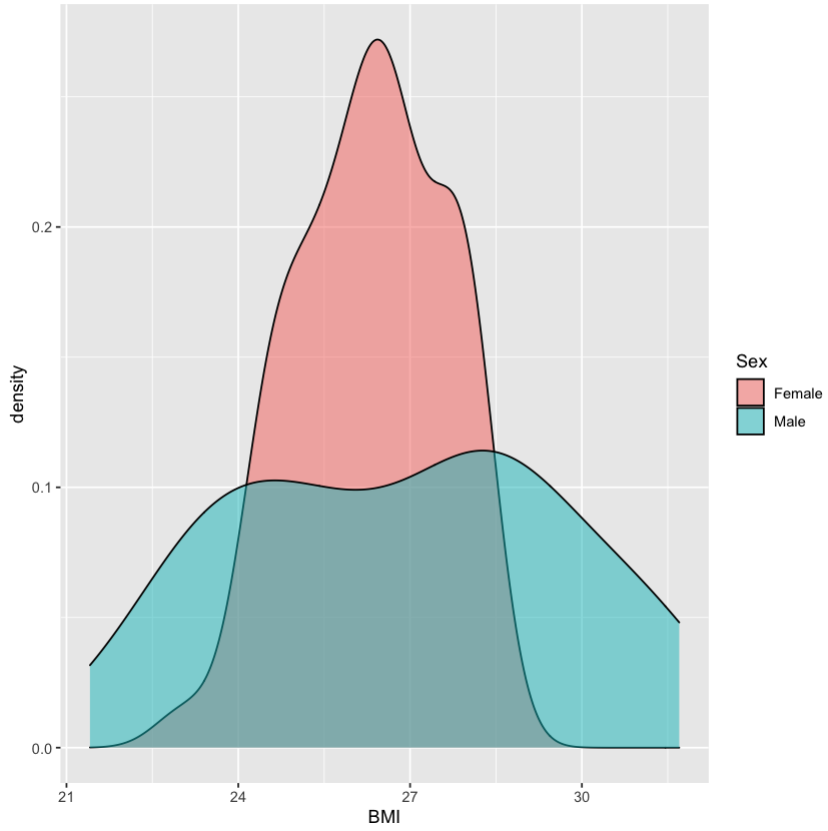
1. Draw violin plot to compare the scores between men and women.

In [7]:
```
patients$Age <- factor(patients$Age)
ggplot(data = patients, mapping = aes(x = Sex, y = Score, fill = Age)) +
  geom_violin()
```



1. Draw the density plot to show the change of BMI following genders

In [8]:
```
ggplot(data = patients, mapping = aes(x = BMI)) +
  geom_density(aes(fill = Sex), alpha = 0.5)
```



In [ ]:
```

```