HW6

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```
library(gapminder)
library(ggplot2)
library(datasets)
library(dplyr)
```

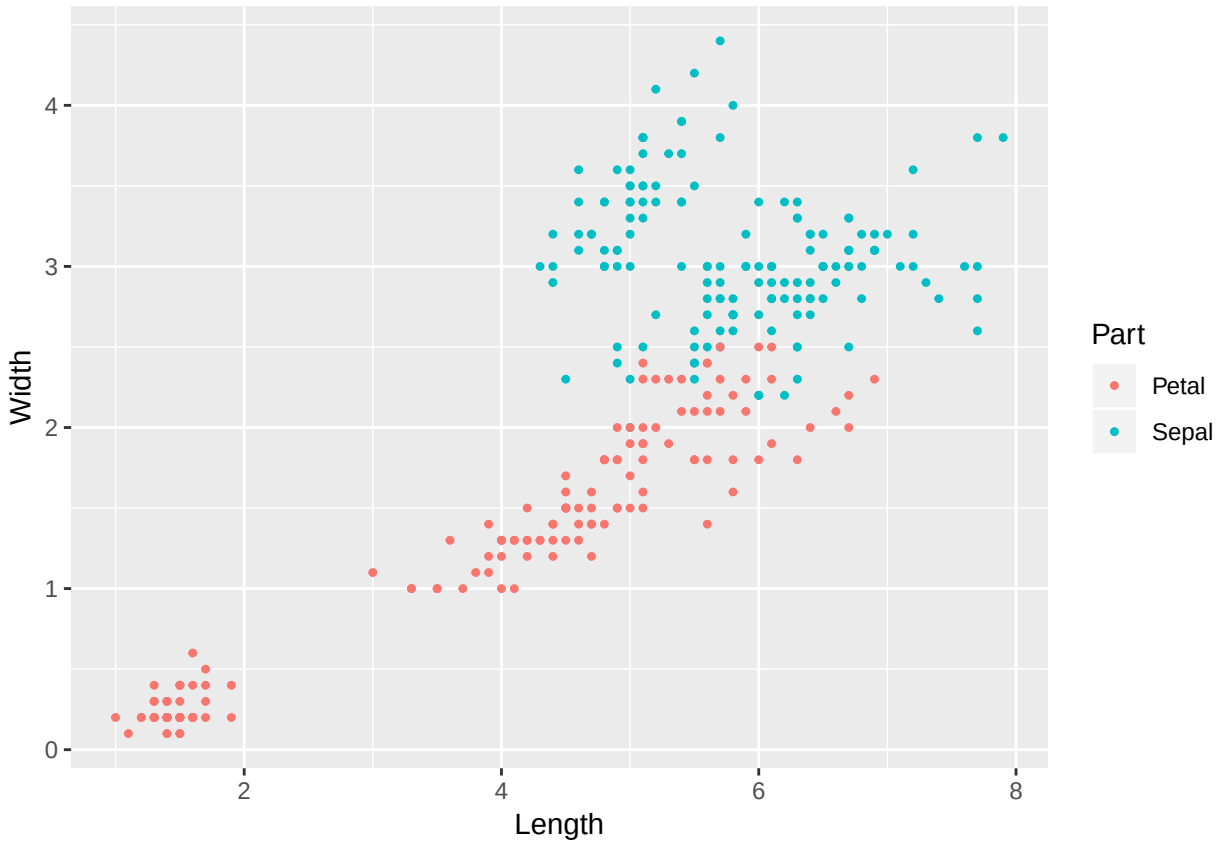
```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

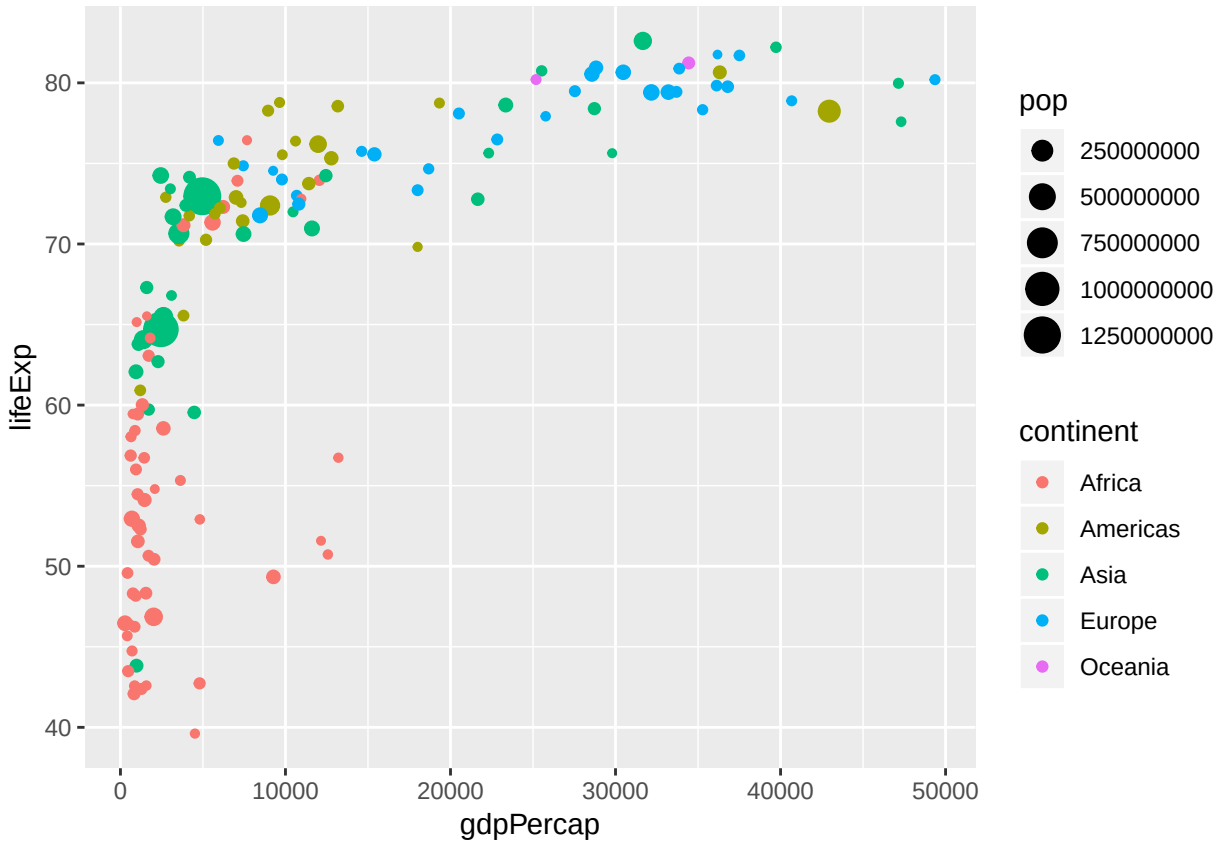
```
iris_long <- iris %>%
 transmute(Species, Part = 'Sepal', Length = Sepal.Length, Width =Sepal.Width)
iris_long1 <- iris %>%
  transmute(Species, Part = 'Petal', Length = Petal.Length, Width = Petal.Width)
iris_long <- rbind(iris_long,iris_long1)
```

```
ggplot(iris_long, aes(x = Length, y = Width, color = Part)) +
  geom_point(shape = 20)
```



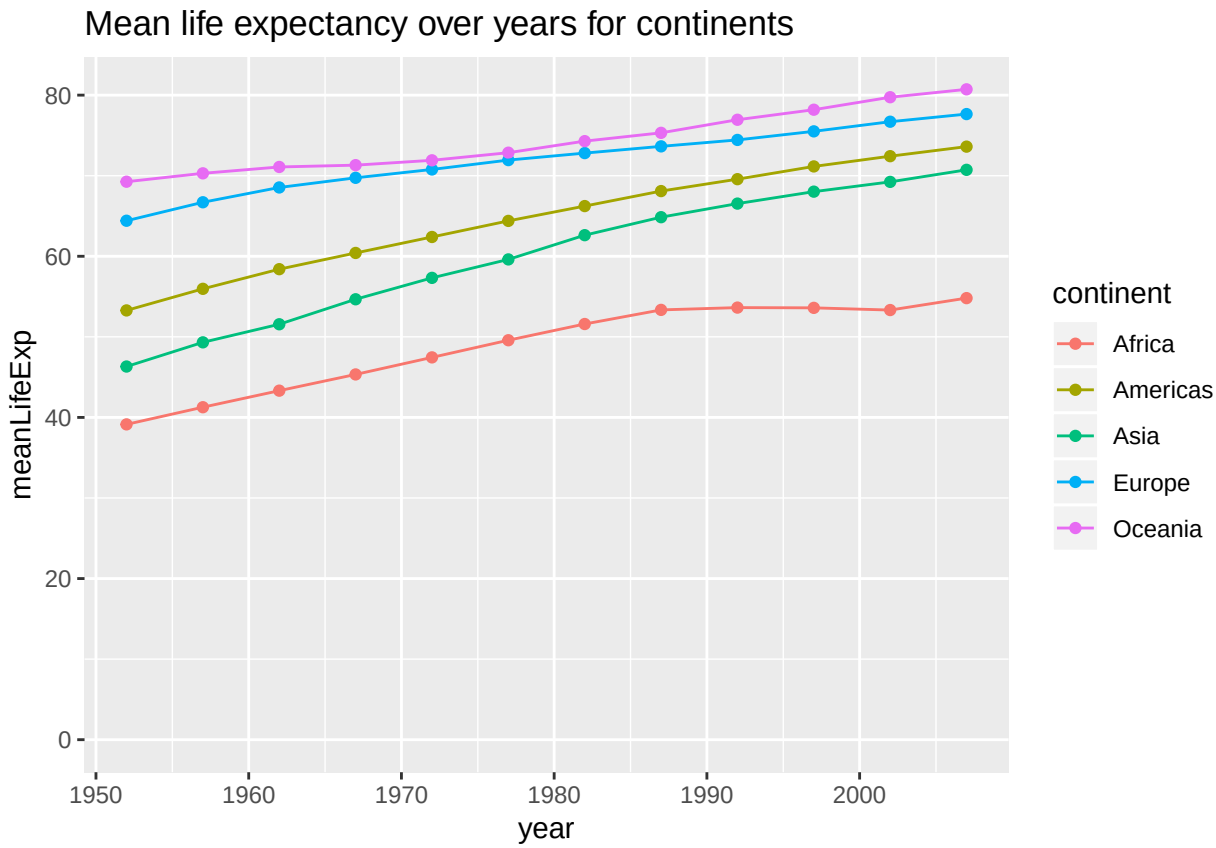

```
year_2007 <- gapminder %>%
  filter(year==2007)
```

```
options(scipen=999)
theme_set(theme_gray())
ggplot(year_2007, aes(x = gdpPercap, color = continent)) +
  geom_point(aes(y = lifeExp, size = pop))
```



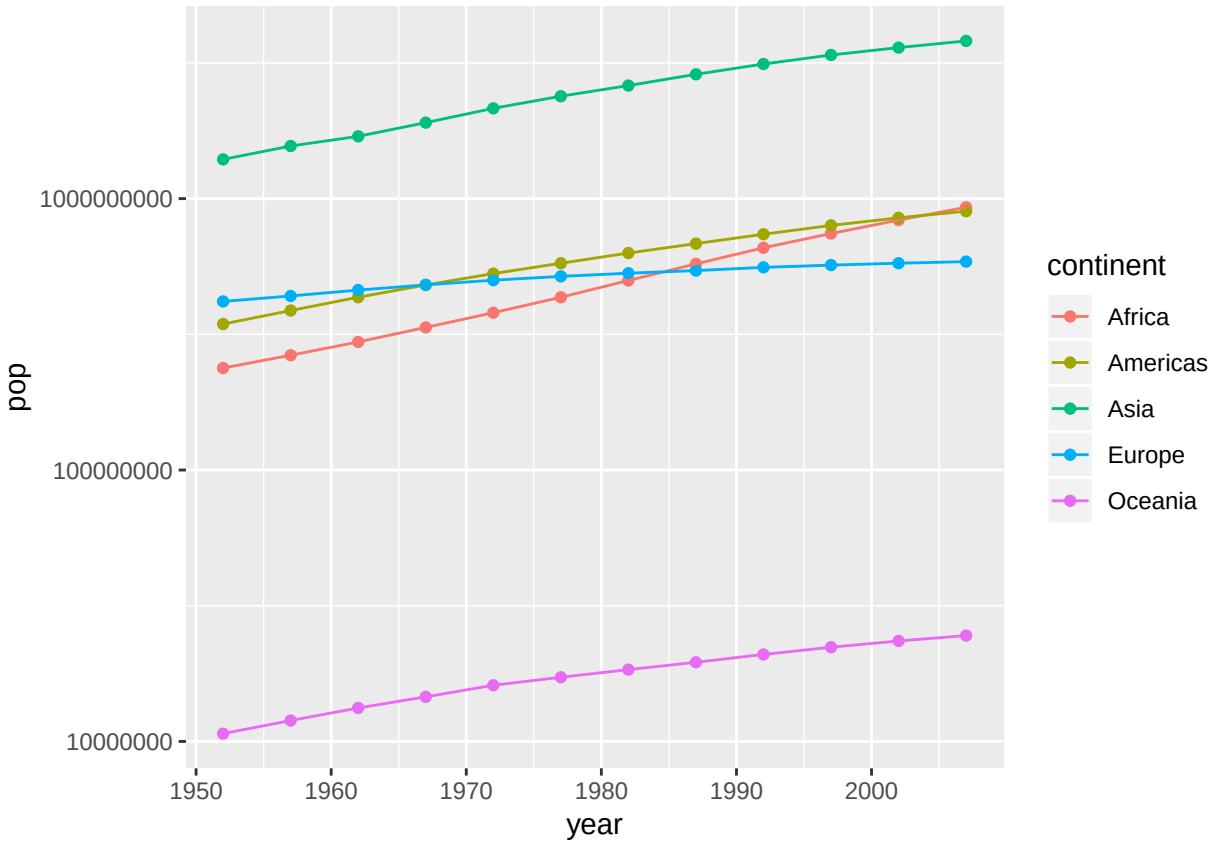

```
df <- aggregate(lifeExp ~ year + continent, data = gapminder, mean)
```

```
ggplot(df, aes(x = year, y = lifeExp, color = continent)) +
  geom_point() +
  geom_line() +
  ylim(0, max(df$lifeExp)) +
  ylab('meanLifeExp') +
  ggtitle('Mean life expectancy over years for continents')
```



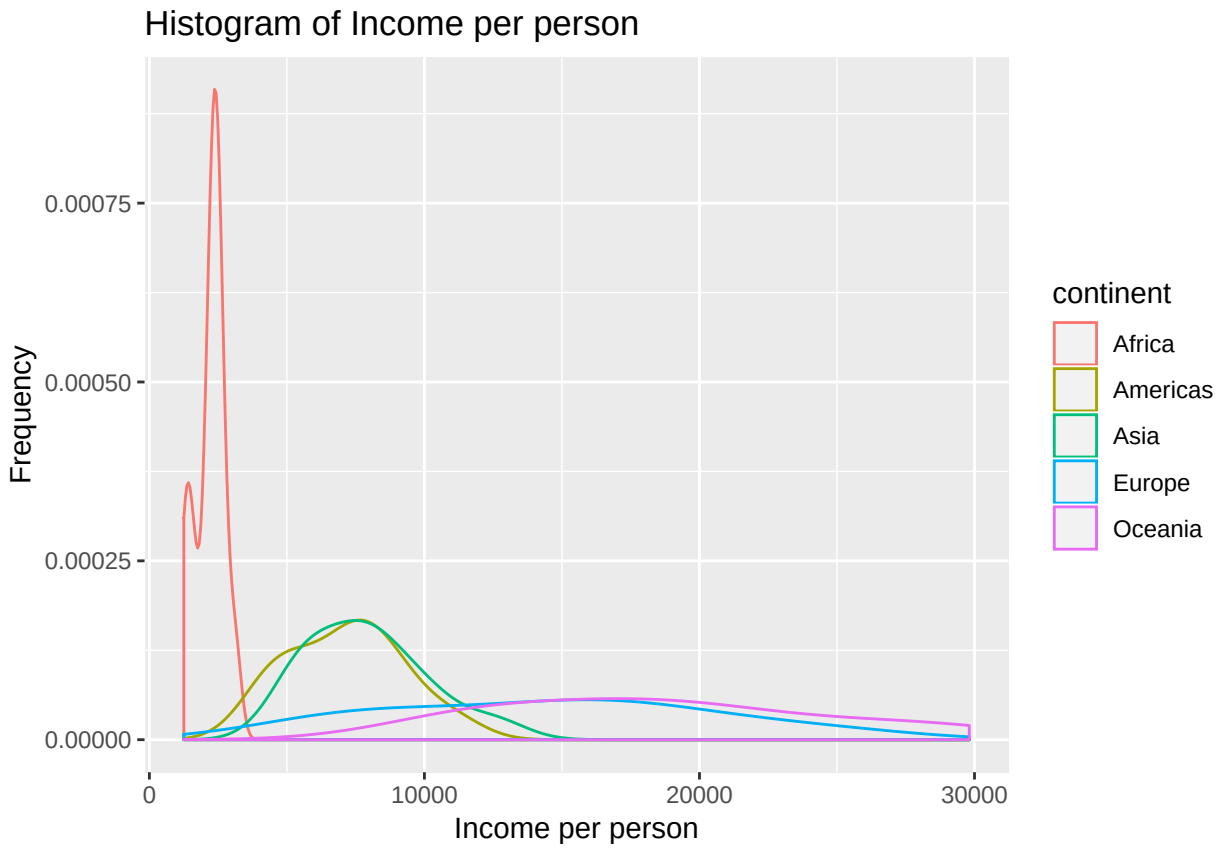

```
df <- aggregate(pop ~ year + continent, data = gapminder, sum)
```

```
ggplot(df, aes(x = year, y = pop, color = continent)) +
  geom_point() +
  geom_line() +
  scale_y_log10()
```

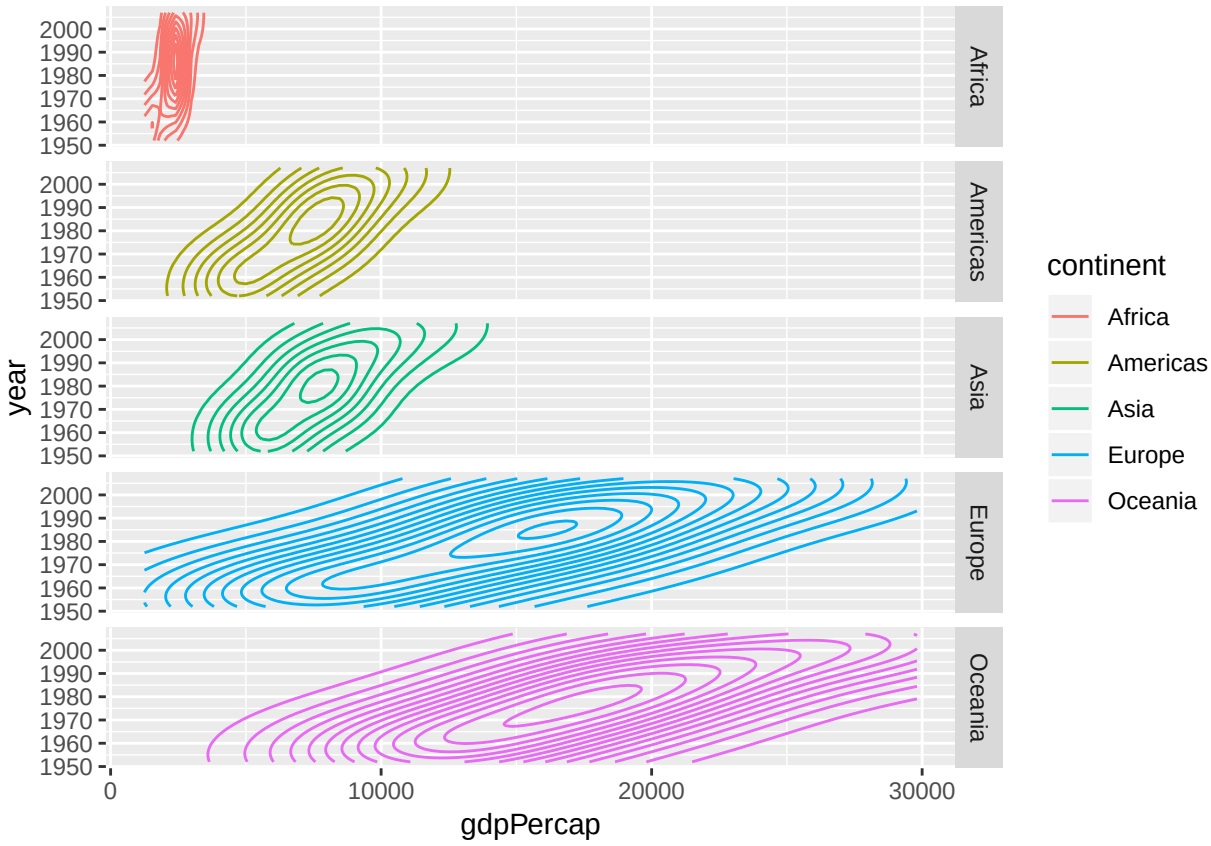



```
df <- aggregate(gdpPercap ~ year + continent, data = gapminder, mean)
```

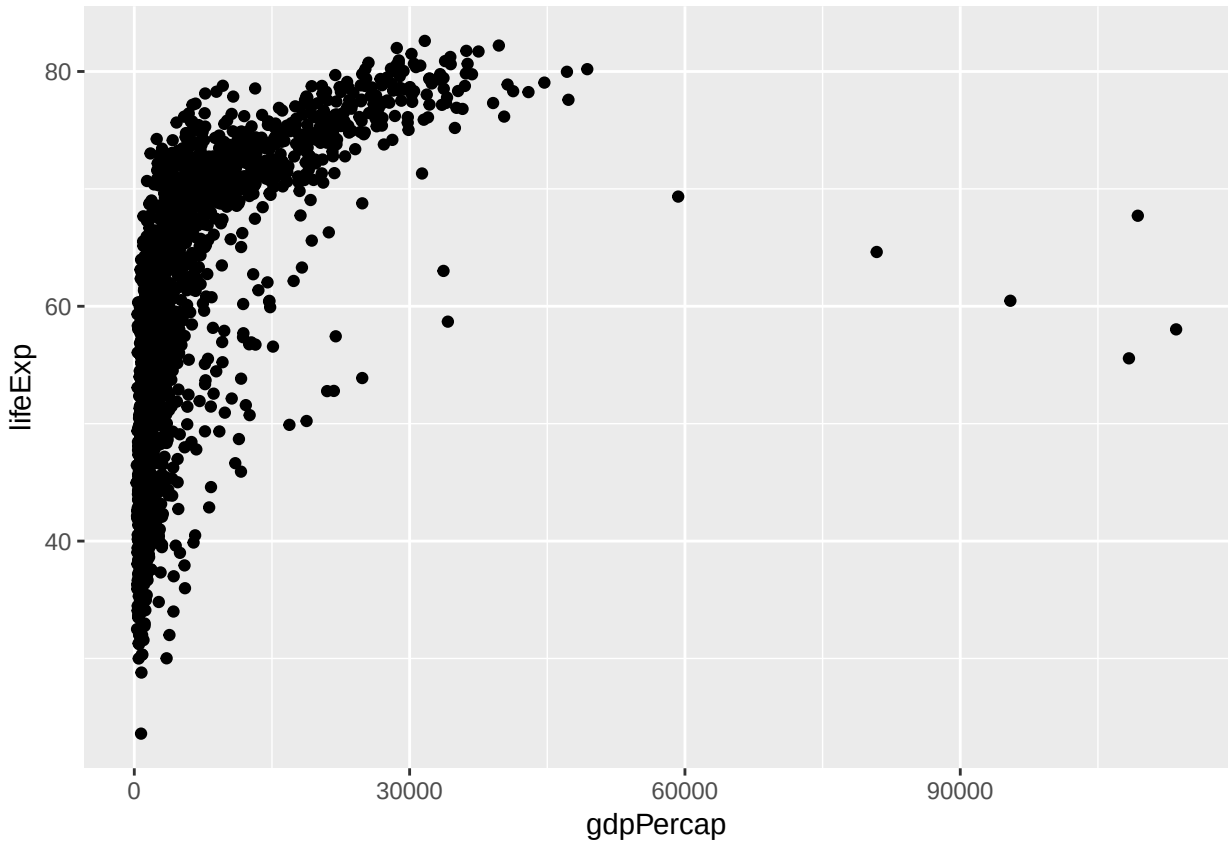
```
ggplot(df, aes(x = df$gdpPercap, color = continent)) +
       geom_density() +
       labs(title = "Histogram of Income per person", x = "Income per person", y = "Frequency")
```




```
df <- aggregate(gdpPercap ~ year + continent, data = gapminder, mean)
ggplot(df, aes(x = gdpPercap,color = continent)) +
  geom_density_2d(aes(y = year)) +
  facet_grid(continent ~ .)
```




```
ggplot(gapminder, aes(x = gdpPercap, y = lifeExp, )) +
  geom_point()
```


80
60
40
lifeExp
0
30000
60000
90000
gdpPercap