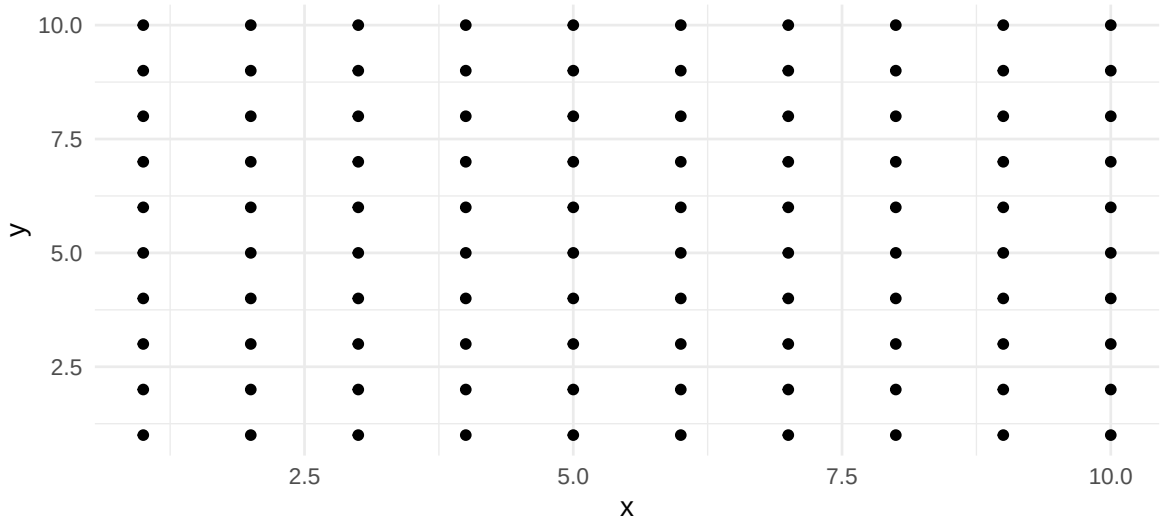
John Hendley & Randy Nguyen

STA 6375

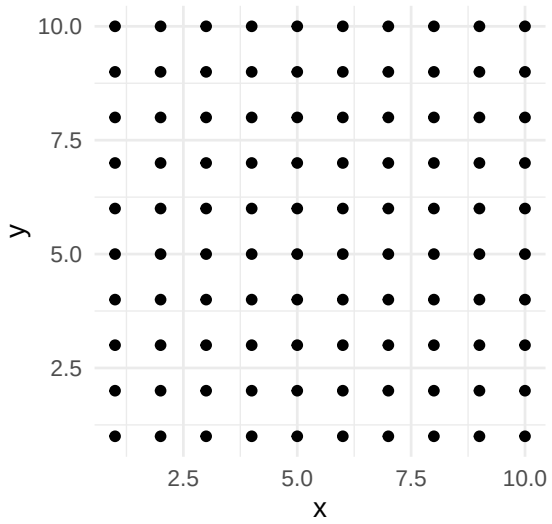
Homework 3

Question 1

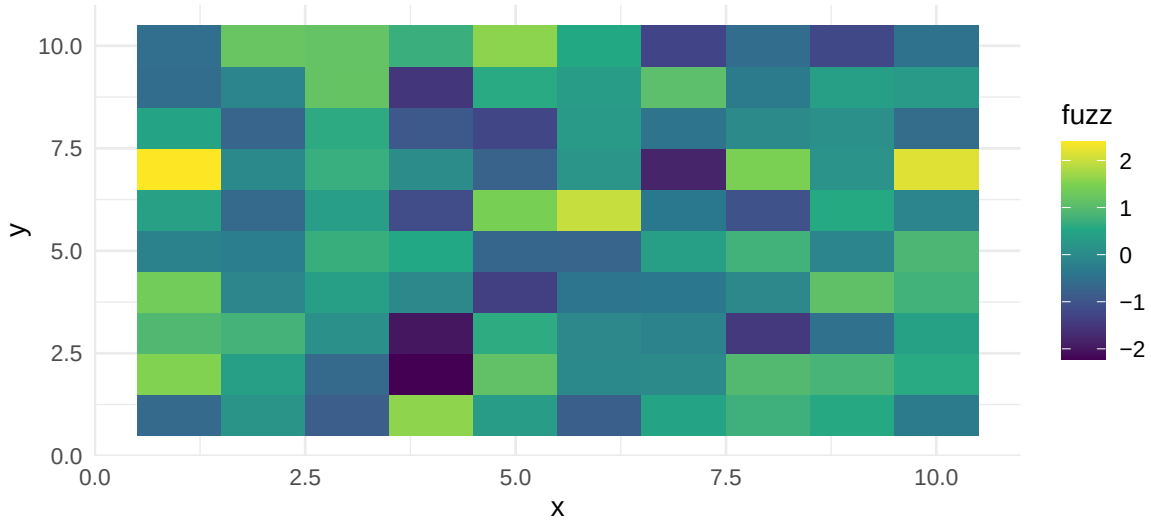
a.
```
library("tidyverse")

df <- expand.grid("x" = 1:10, "y" = 1:10)
ggplot(df, aes(x, y)) +
  geom_point() +
  theme_minimal()
```



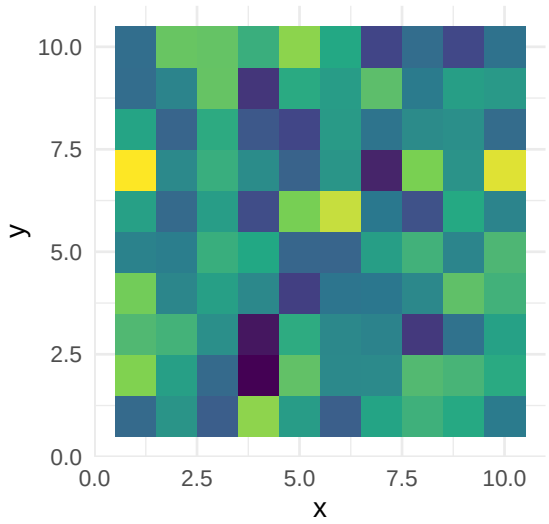
b.
```
ggplot(df, aes(x, y)) +
  geom_point() +
  theme_minimal() +
  coord_equal()
```



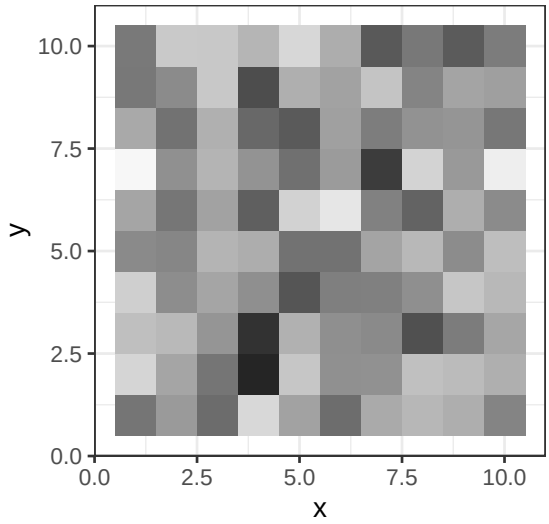
c.
```
set.seed(1)
fuzz <- rnorm(nrow(df))
ggplot(df, aes(x, y, fill = fuzz)) +
  theme_minimal() +
  geom_tile()
```



d.
```
set.seed(1)
fuzz <- rnorm(nrow(df))
ggplot(df, aes(x, y, fill = fuzz)) +
  theme_minimal() +
  geom_tile() +
  theme(legend.position = "none") +
  coord_equal()
```

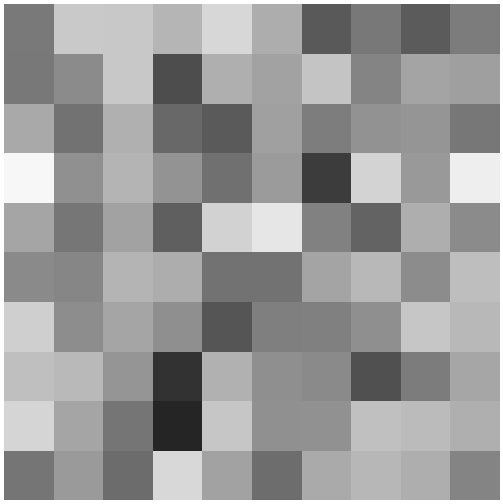


e.
```
set.seed(1)
fuzz <- rnorm(nrow(df))
ggplot(df, aes(x, y, fill = fuzz)) +
  theme_bw() +
  geom_tile() +
  coord_equal() +
  theme(legend.position = "none") +
  scale_fill_distiller(palette = "Greys")
```

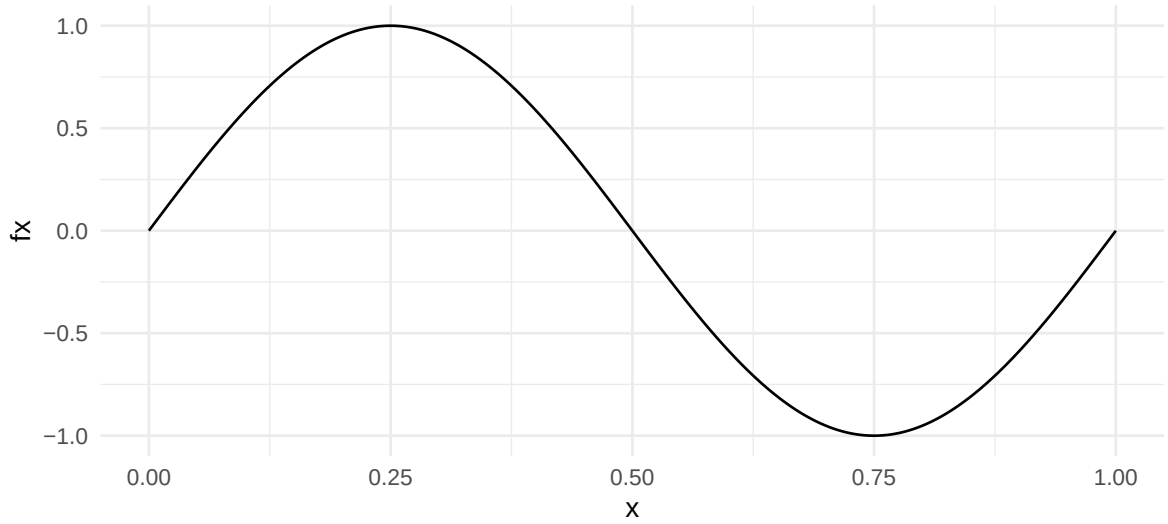


f.
```
set.seed(1)
fuzz <- rnorm(nrow(df))
ggplot(df, aes(x, y, fill = fuzz)) +
  geom_tile() +
  coord_equal() +
  scale_fill_distiller(palette = "Greys") +
  ylab(NULL) +
```

```
  xlab(NULL) +
  theme_void() +
  theme(legend.position = "none")
```

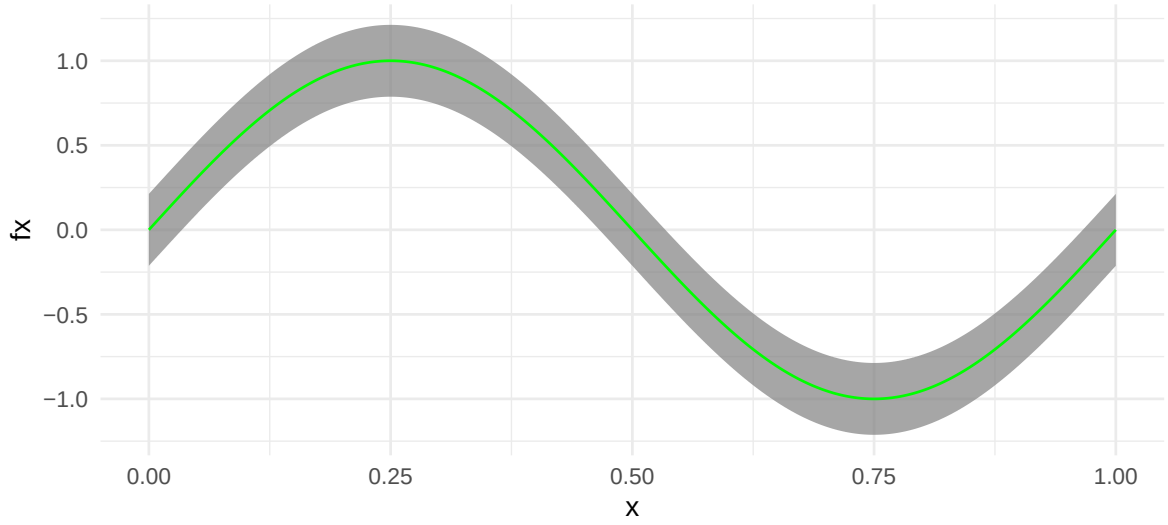


g.
```
x <- seq(0, 1, 1e-4)
fx <- sin(2*pi*x)
sine <- data.frame("x" = x, "y" = fx)
ggplot(sine, aes(x, fx)) +
  theme_minimal() +
  geom_line()
```

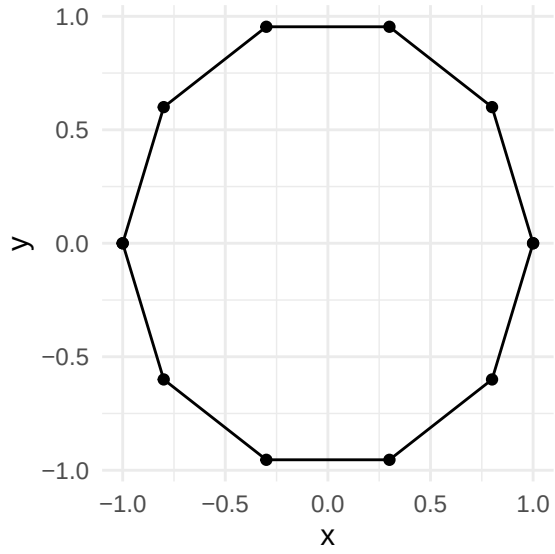


h.
```
x <- seq(0, 1, 1e-4)
fx <- sin(2*pi*x)
sine <- data.frame("x" = x, "y" = fx)
ggplot(sine, aes(x, fx)) +
```

```
  theme_minimal() +
  geom_ribbon(aes(ymin = fx - 0.2125, ymax = fx + 0.2125), fill = "grey50", alpha = 0.7) +
  geom_line(color = "green")
```



i.
```
x1 <- c(-1, -0.8, -0.3, 0.3, 0.8, 1)
decagon_top <- sqrt(1 - (x1)^2)
x2 <- c(1, 0.8, 0.3, -0.3, -0.8, -1)
decagon_bot <- -1*sqrt(1 - (x2)^2)
decagon <- data.frame(x = c(x1, x2), y = c(decagon_bot, decagon_top))
ggplot(decagon, aes(x, y)) +
  geom_point() +
  geom_path() +
  theme_minimal()
```



j.
```r
set.seed(1)
df <- data.frame(x = rnorm(1e3, mean = 3, sd = 2))
```

Question 2

a.

b.

c.

d.

e.

f.