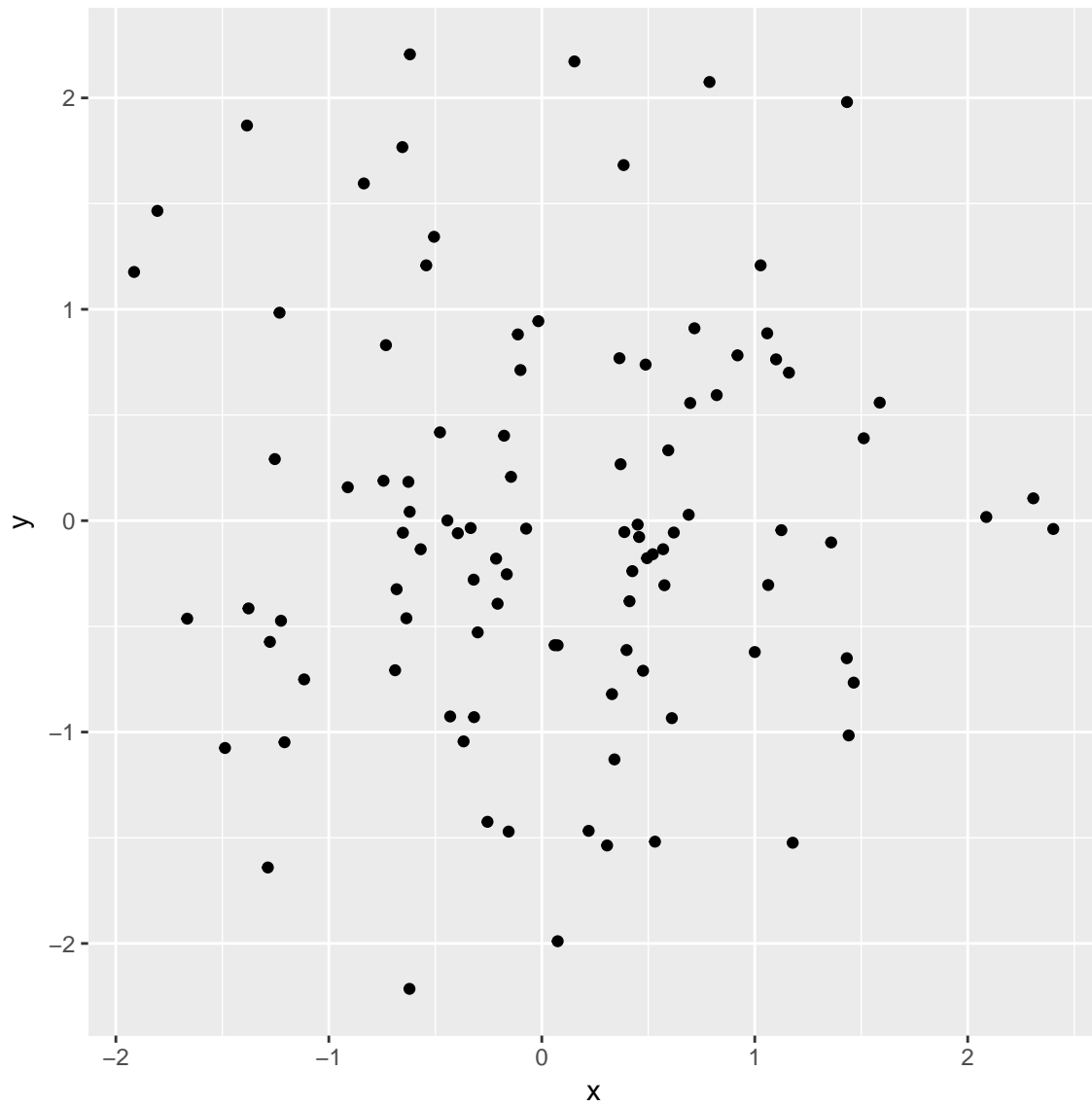# Guess the correlation; is the correlation useful in this example?

```
ggplot(data = example, mapping = aes(x = x, y = y)) +
  geom_point()
```
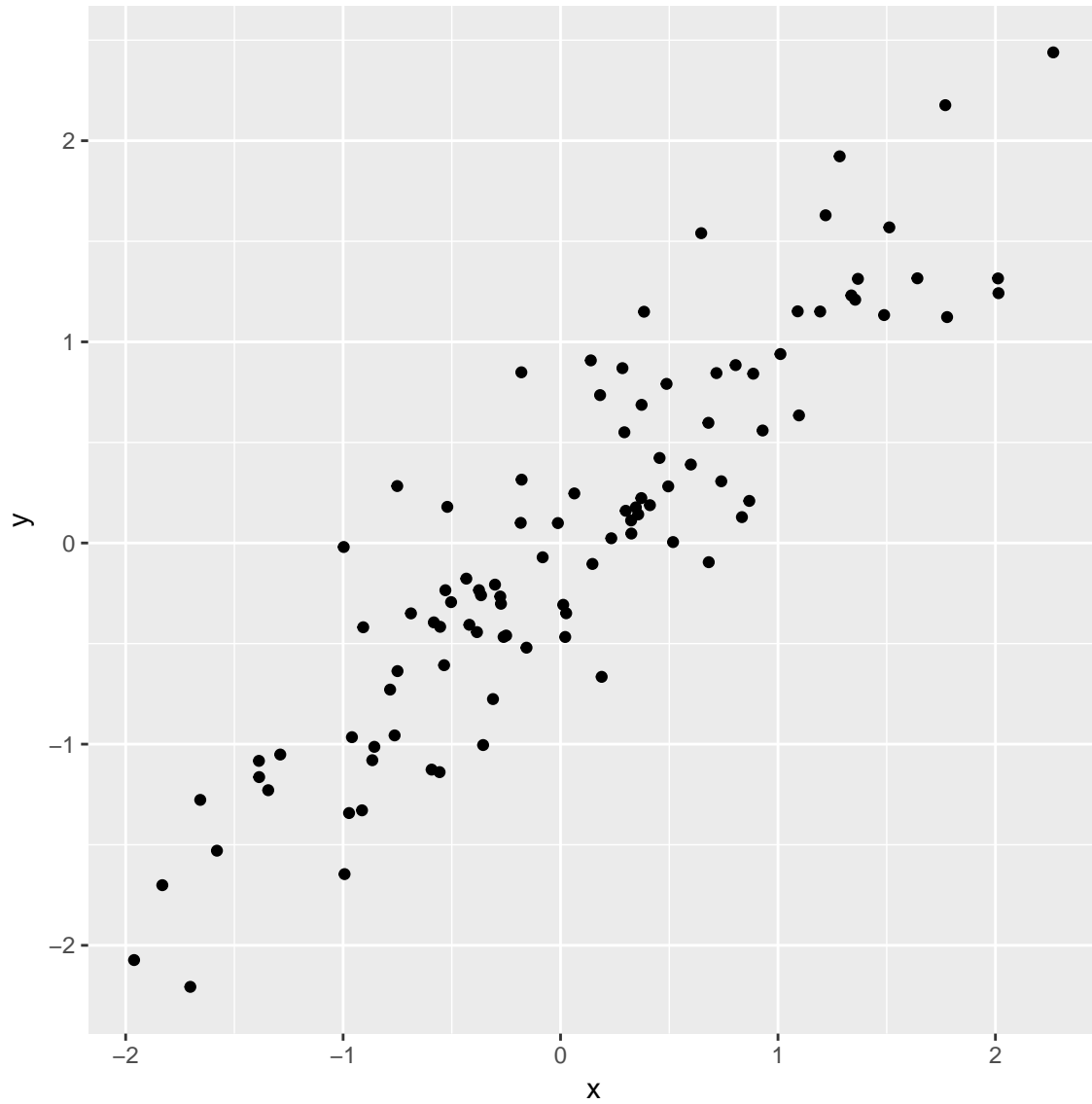
```
example %>%
  cor()
```

```
##                    x           y
## x 1.000000000 0.006915597
## y 0.006915597 1.000000000
```

The correlation is useful in this example.

Guess the correlation; is the correlation useful in this example?

```
ggplot(data = example, mapping = aes(x = x, y = y)) +
  geom_point()
```
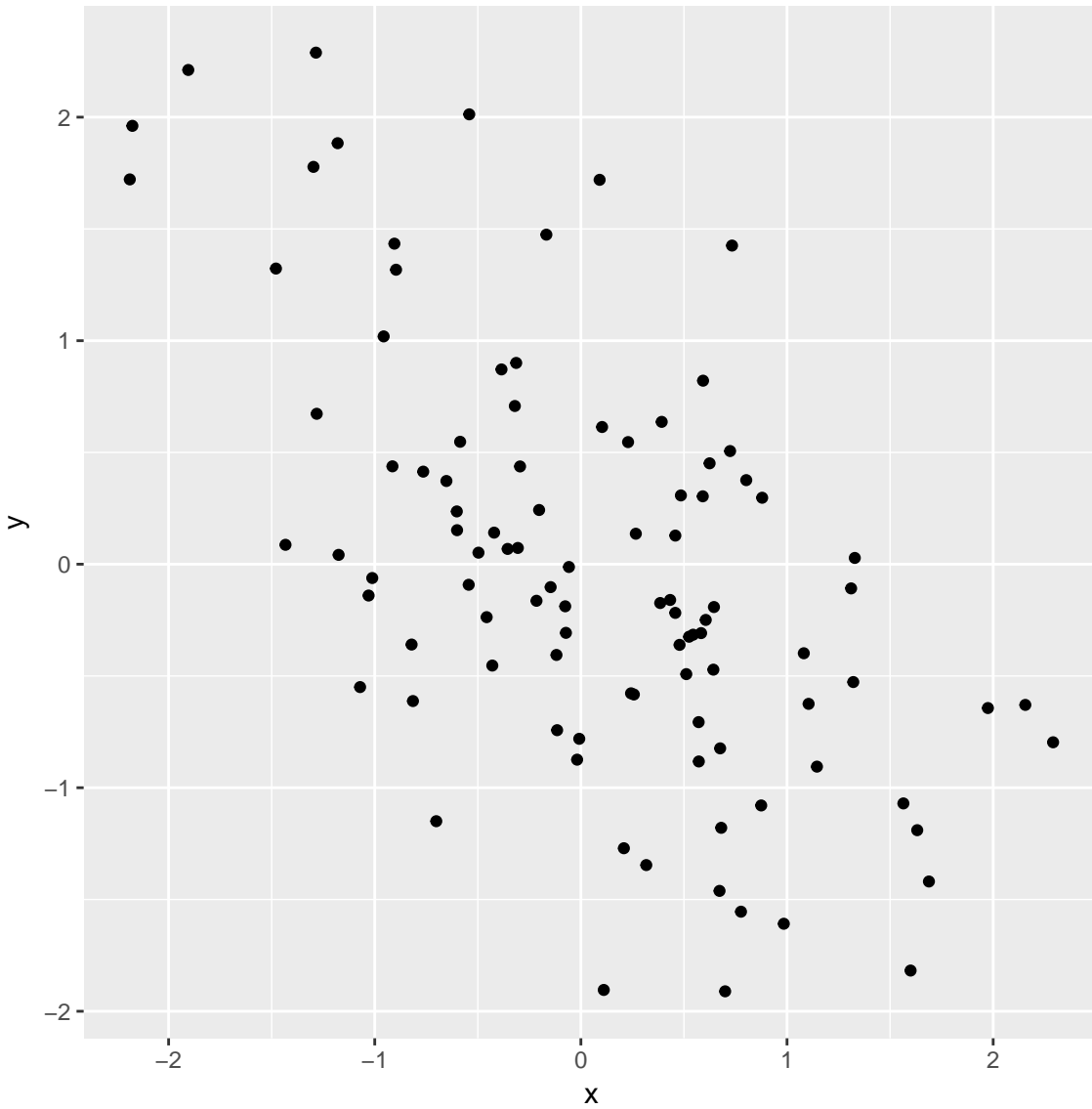
```
example %>%
  cor()
```

```
##           x         y
## x 1.0000000 0.9013874
## y 0.9013874 1.0000000
```

The correlation is useful in this example.

Guess the correlation; is the correlation useful in this example?

```
ggplot(data = example, mapping = aes(x = x, y = y)) +
  geom_point()
```
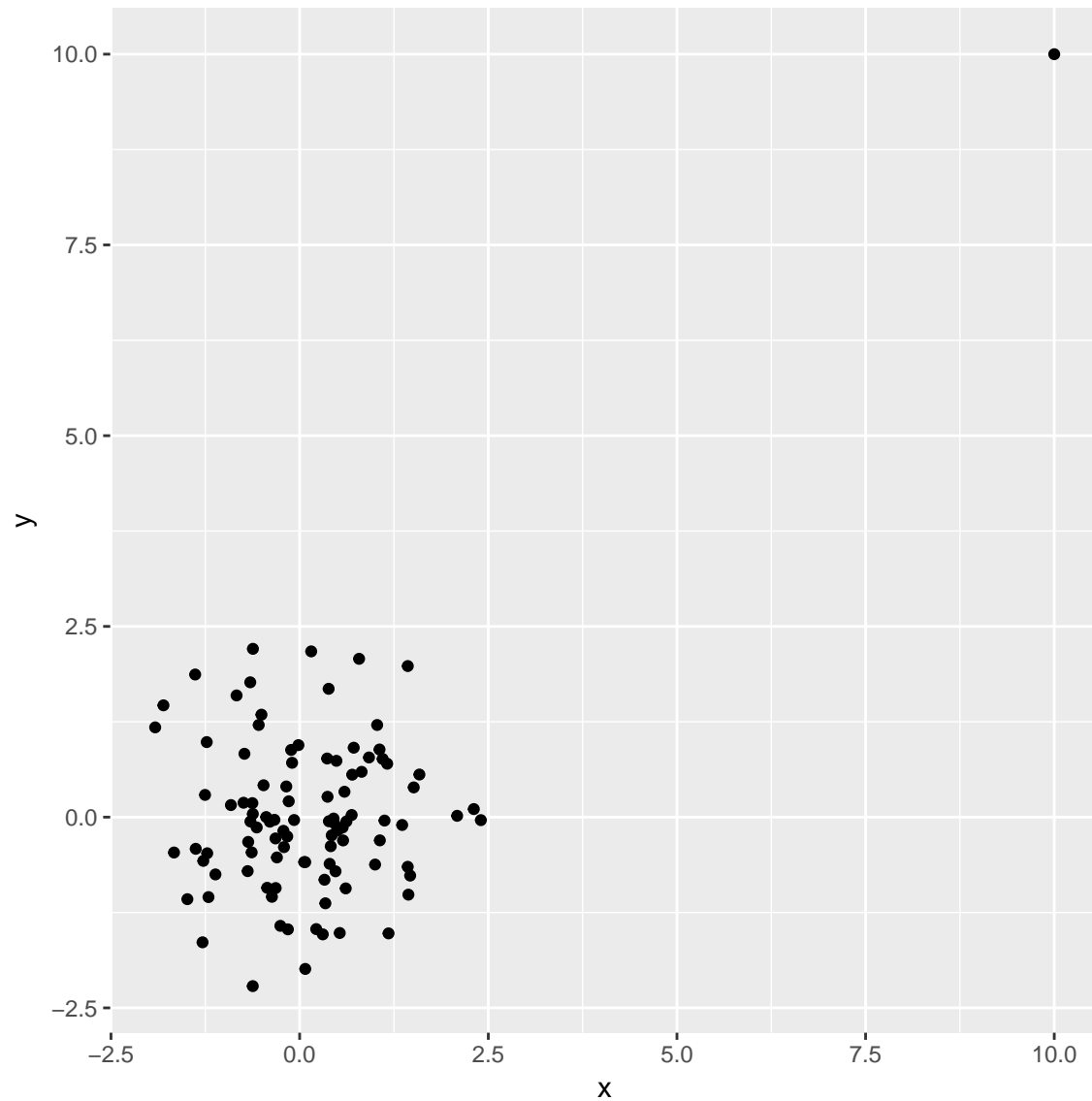
```
example %>%
  cor()
```

```
##             x          y
## x  1.0000000 -0.5957445
## y -0.5957445  1.0000000
```

The correlation is useful in this example.

Guess the correlation; is the correlation useful in this example?

```
ggplot(data = example, mapping = aes(x = x, y = y)) +
  geom_point()
```
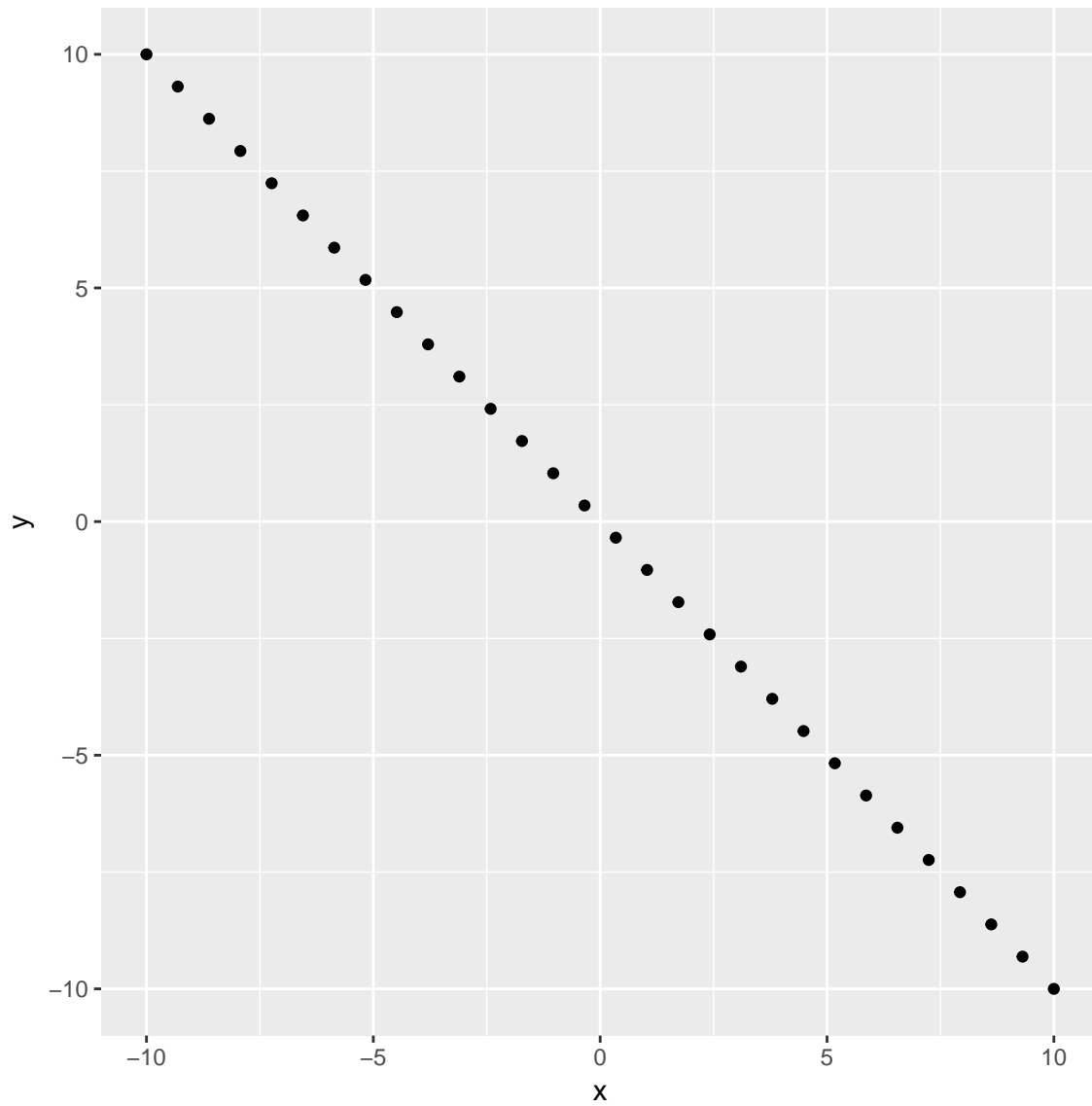
```
example %>%
  cor()
```

```
##           x         y
## x 1.0000000 0.5373873
## y 0.5373873 1.0000000
```

The correlation is not useful in this example; there is an outlier.

Guess the correlation

```
ggplot(data = example, mapping = aes(x = x, y = y)) +
  geom_point()
```
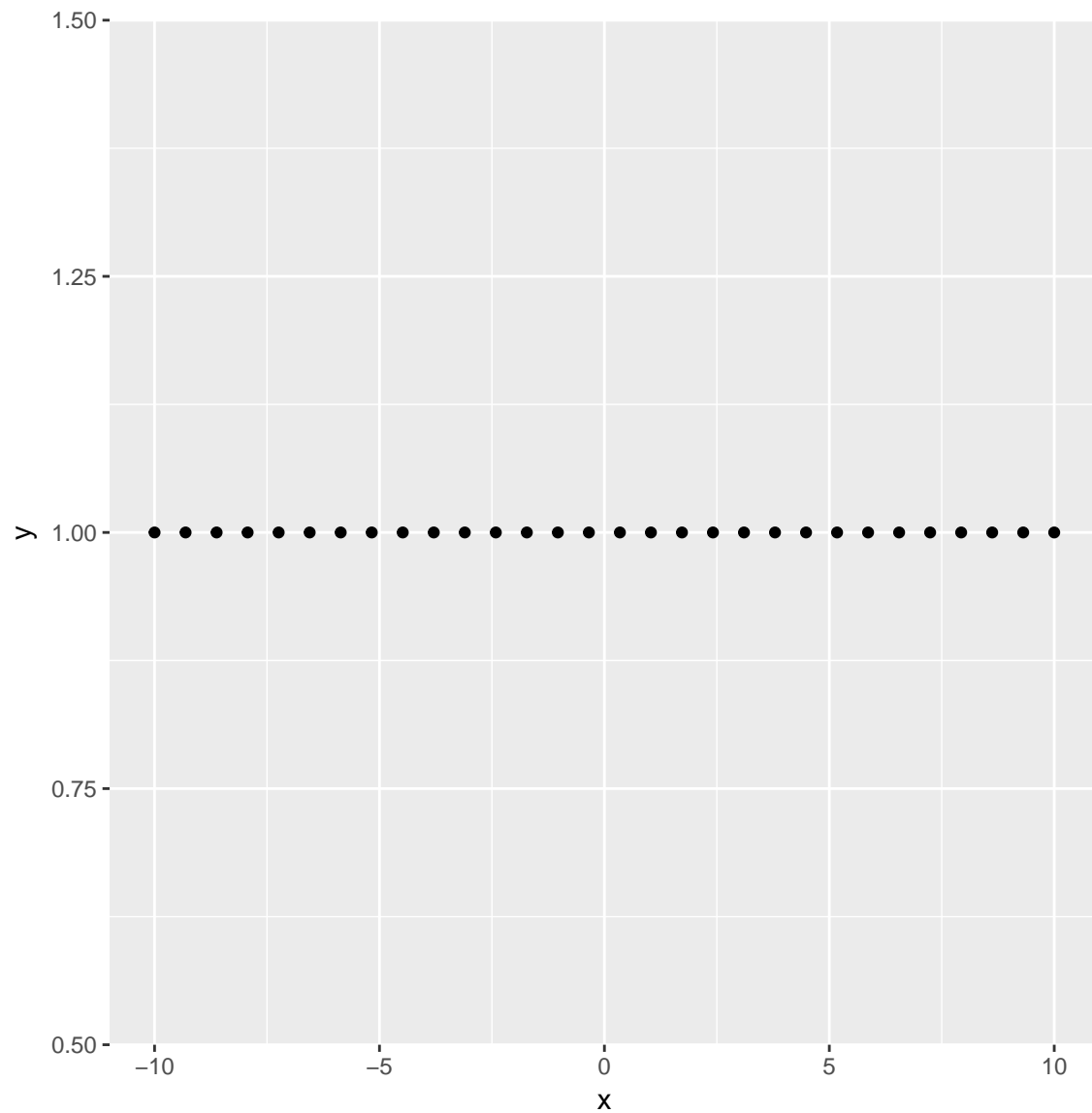
```
example %>%
  cor()
```

```
##     x  y
## x  1 -1
## y -1  1
```

The correlation is useful in this example.

Guess the correlation; is the correlation useful in this example?

```
ggplot(data = example, mapping = aes(x = x, y = y)) +
  geom_point()
```

```
example %>%
  cor()
```

Warning in cor(.): the standard deviation is zero

```
##    x  y
## x  1 NA
## y NA  1
```

R says the correlation is `NA`, but we define the correlation to be 0. The correlation is useful in this example.

Guess the correlation; is the correlation useful in this example?

```
ggplot(data = example, mapping = aes(x = x, y = y)) +
  geom_point()
```
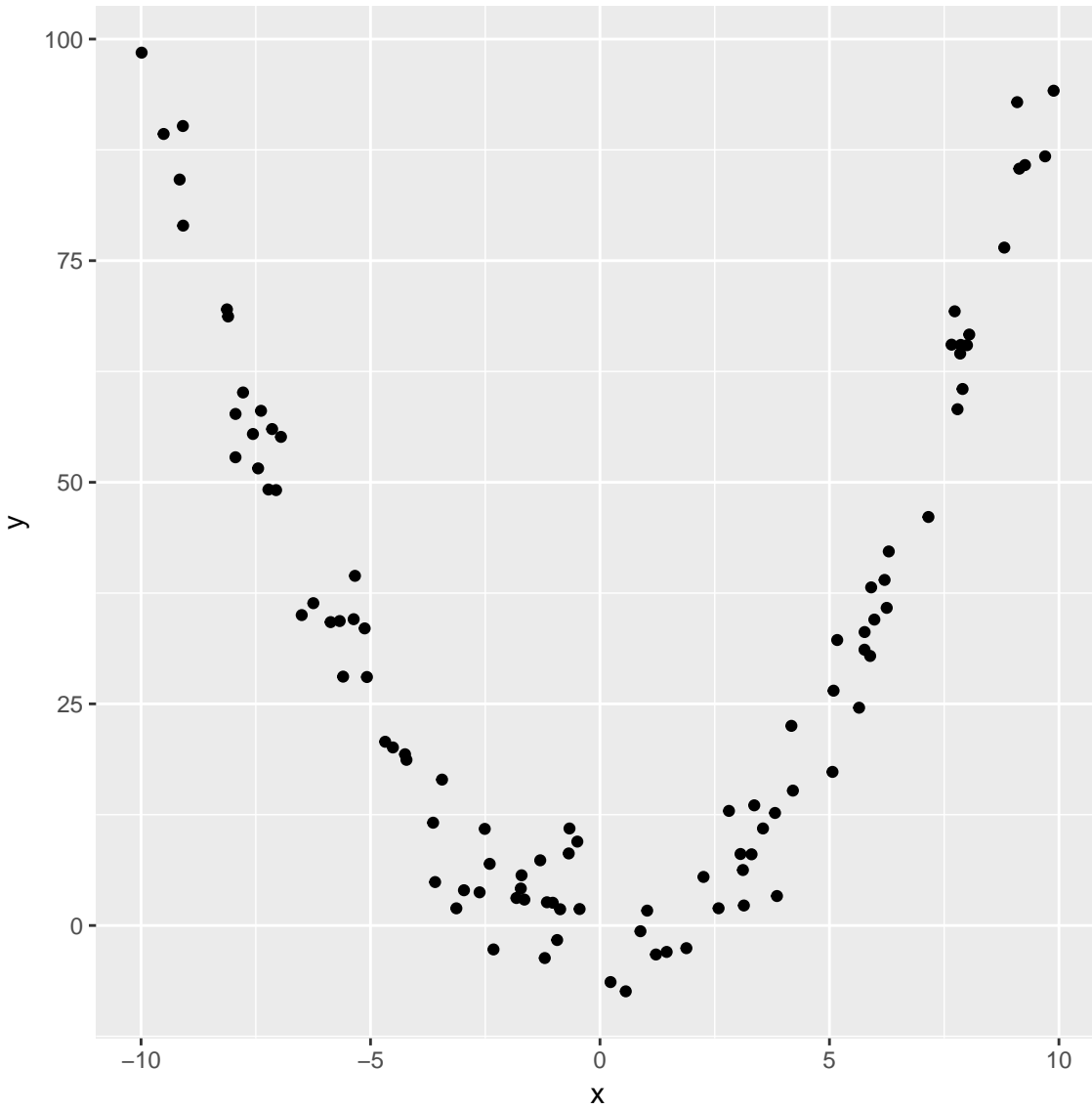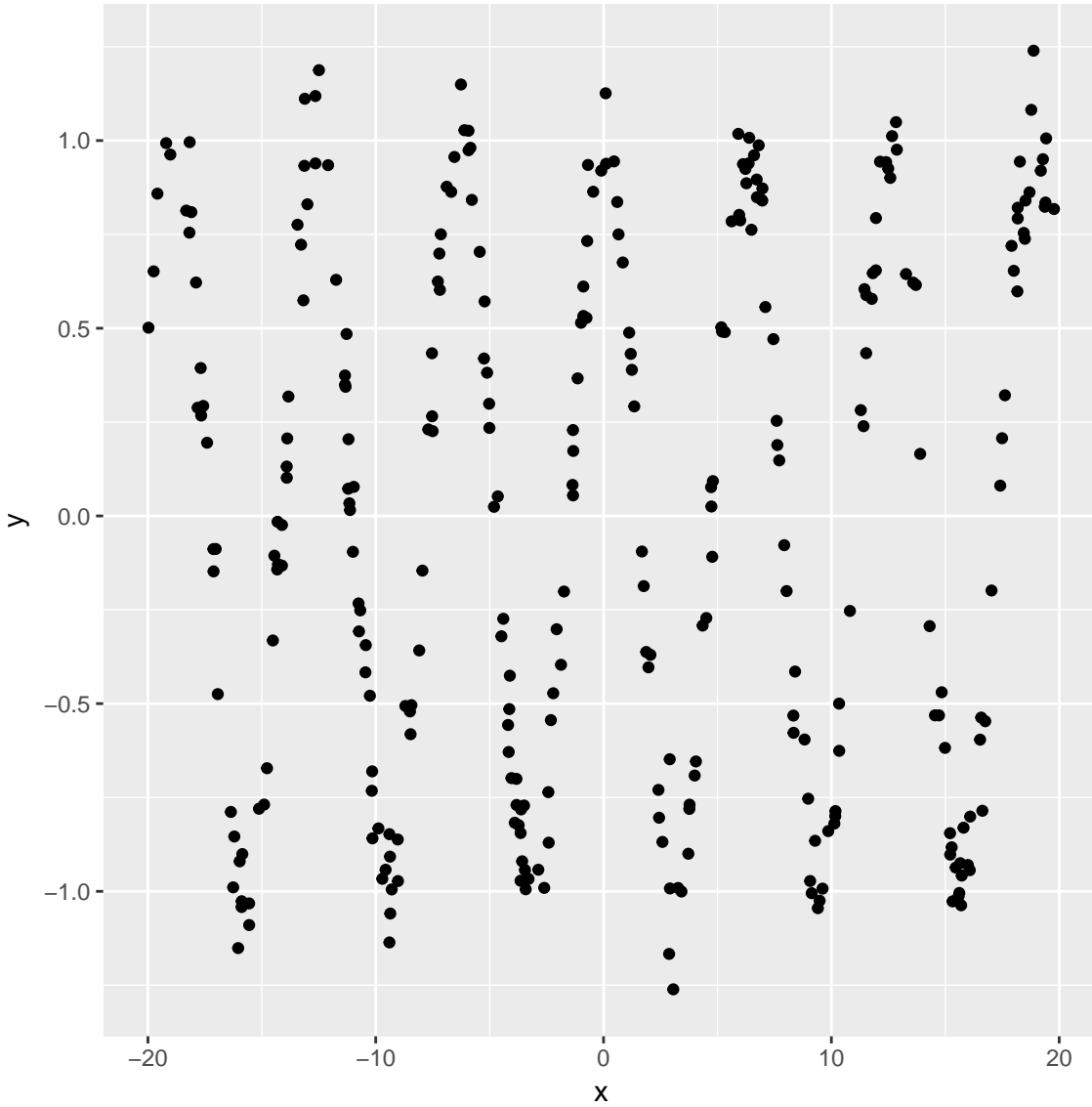
```
example %>%
  cor()
```

```
##              x          y
## x 1.00000000 0.02204531
## y 0.02204531 1.00000000
```

Correlation is not useful; non-linear relationship

Guess the correlation; is the correlation useful in this example?

```
ggplot(data = example, mapping = aes(x = x, y = y)) +
  geom_point()
```
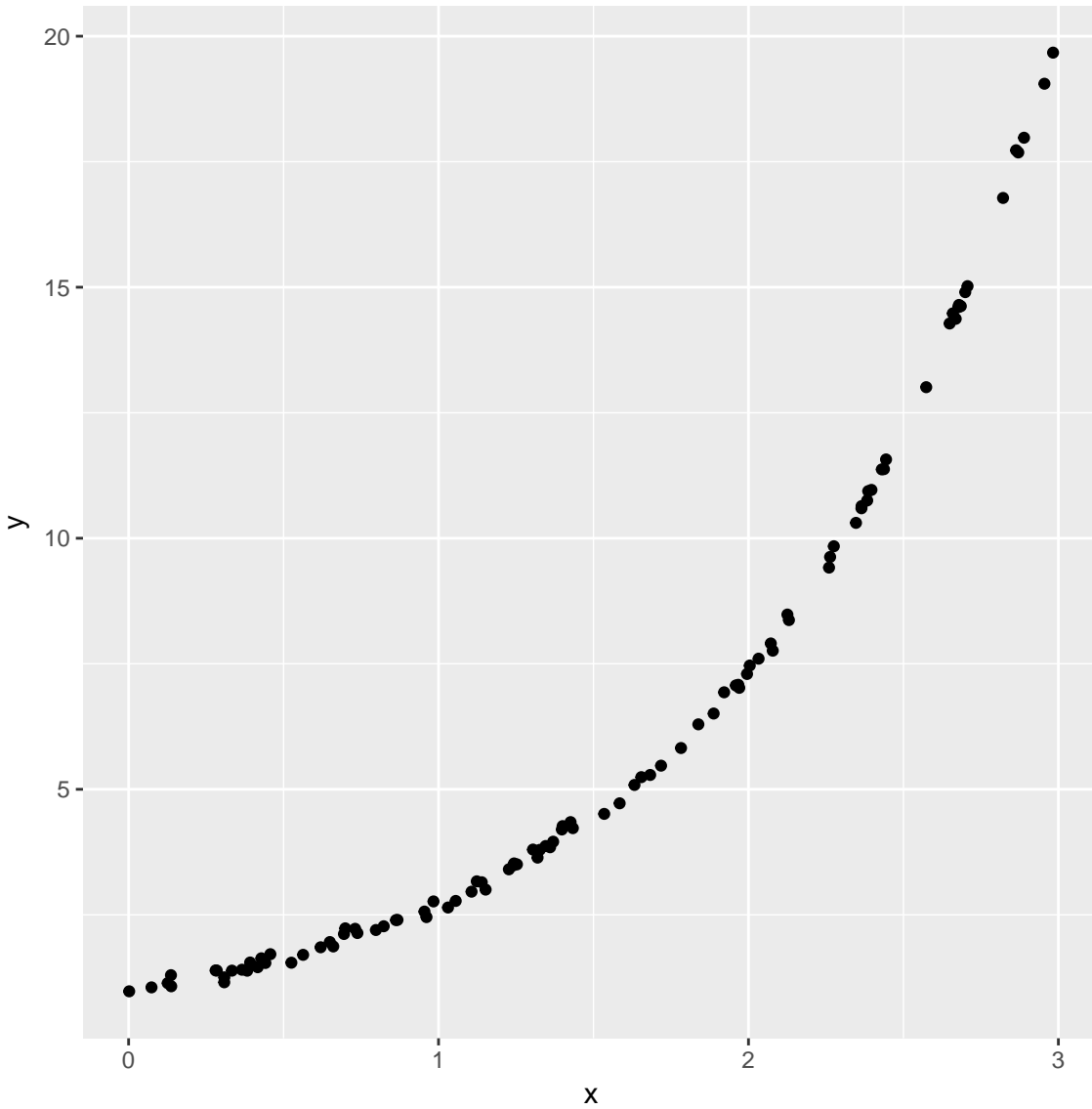
```
example %>%
  cor()
```

```
##           x         y
## x 1.0000000 0.0564454
## y 0.0564454 1.0000000
```

Correlation is not useful; non-linear relationship.

Guess the correlation; is the correlation useful in this example?

```
ggplot(data = example, mapping = aes(x = x, y = y)) +
  geom_point()
```

```
example %>%
  cor()
```

```
##           x         y
## x 1.0000000 0.9389025
## y 0.9389025 1.0000000
```

Correlation is not useful; non-linear relationship