Exercises - Class 2; Objects and classes

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1.

Create the following vectors with the function `rep()` (or its variants described on its help page):

```
rep(3, times = 5)
```

```
## [1] 3 3 3 3 3
```

```
rep(c(3, 1, 2), each = 2)
```

```
## [1] 3 3 1 1 2 2
```

```
rep(c(3, 1, 2), length.out = 5)
```

```
## [1] 3 1 2 3 1
```

```
rep(c(3, 1, 2), times = c(3, 1, 2))
```

```
## [1] 3 3 3 1 2 2
```

2.

Create the following vectors with the function `seq()` (or its variants described on its help page):

```
seq(from = 1, to = 9, by = 2)
```

```
## [1] 1 3 5 7 9
```

```
seq(from = 1, to = 10, along.with = c(3, 2, 1))
```

```
## [1]  1.0  5.5 10.0
```

```
seq(from = 1, to = 10, length.out = 7)
```

```
## [1]  1.0  2.5  4.0  5.5  7.0  8.5 10.0
```

```
seq(from = 10, to = 2, by = -2)
```

```
## [1] 10  8  6  4  2
```

3.

The function `replicate()` is sometimes wrongly used instead of `rep()` to repeat values. Use the function `system.time()` to measure the performance of both functions in repeating the value 3 for a total of 1e6 times.

```
system.time(
  rep(1, times = 1e6)
)
```

```
##    user  system elapsed
##    0.00    0.01    0.02
```

```
system.time(
  replicate(1e6, 1)
)
```

```
##    user  system elapsed
##    0.53    0.02    1.19
```

4.

The difference between `integer` and double(-precision floating point number) values is the byte size with which R stores them in memory. Byte size is also dependent on the attributes of the object. Use the function object.size() to show this for: