

HW2

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2.2.4 Q1

```
vec_1 <- c(7, 24, 8, 26)
length(vec_1)
```

```
## [1] 4
```

```
class(vec_1)
```

```
## [1] "numeric"
```

2.2.4 Q2

```
char_1 <- c('I', 'am', 'learning', 'R!')
length(char_1)
```

```
## [1] 4
```

```
class(char_1)
```

```
## [1] "character"
```

```
paste(char_1, collapse = ' ')
```

```
## [1] "I am learning R!"
```

2.2.4 Q3

```
nchar(char_1)
```

```
## [1] 1 2 8 2
```

```
toupper(char_1)
```

```
## [1] "I"      "AM"      "LEARNING" "R!"
```

2.2.4 Q4

```
is_char <- c(is.character(vec_1), is.character(char_1))
is_char
```

```
## [1] FALSE TRUE
```

2.3.3 Q1

```
x1 <- c(1, 2, 3)
logi_1 <- x1 <= x1 ** 2
logi_1
```

```
## [1] TRUE TRUE TRUE
```

2.3.3 Q2

```
logi_2 <- c(TRUE, TRUE, FALSE)
logi_3 <- c(is.integer(logi_2), is.double(logi_2), is.character(logi_2), is.logical(logi_2))
logi_3
```

```
## [1] FALSE FALSE FALSE TRUE
```

2.6.6 Q1

```
seq1 <- 1:5*2
seq1
```

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

```
seq2 <- seq(2, 10, 2)
seq2
```

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

```
seq3 <- seq(5) * 2
seq3
```

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

```
seq4 <- seq(from = 2, by = 2, length.out = 5)
seq4
```

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

```
seq5 <- seq(to = 10, by = 2, length.out = 5)
seq5
```

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

2.6.6 Q2

```
seq6 <- rep(c(2, 6, 8), each = 2, times = 2)
seq6
```

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

```
seq7 <- rep(c(rep(2, 2), rep(6, 2), rep(8, 2)), 2)
seq7
```

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

2.6.6 Q3

```
sec8 <- c(1:3, 1:5, 1:7)
sec8
```

```
## [1] 1 2 3 1 2 3 4 5 1 2 3 4 5 6 7
```

```
table(sec8)
```

```
## sec8
## 1 2 3 4 5 6 7
## 3 3 3 2 2 1 1
```

```
sec9 <- c(rep(1:3, 2), 4:5, 1:7)
sec9
```

```
## [1] 1 2 3 1 2 3 4 5 1 2 3 4 5 6 7
```

```
table(sec9)
```

```
## sec9
## 1 2 3 4 5 6 7
## 3 3 3 2 2 1 1
```

2.9.4 Q1

```
rep(c('a', 'b', 'c', 'd'), 3)
```

```
## [1] "a" "b" "c" "d" "a" "b" "c" "d" "a" "b" "c" "d"
```

```
rep(c('a', 'b', 'c', 'd'), each = 3)
```

```
## [1] "a" "a" "a" "b" "b" "b" "c" "c" "c" "d" "d" "d"
```

```
rep(c('a', 'b', 'c', 'd'), c(4:1))
```

```
## [1] "a" "a" "a" "a" "b" "b" "b" "c" "c" "d"
```

2.9.4 Q2

```
paste(c('Alice', 'Bob', 'Charlie'), 'has been playing', c('tennis', 'soccer', 'baseball'), 'for', 4:2,
```

```
## [1] "Alice has been playing tennis for 4 years in London."
## [2] "Bob has been playing soccer for 3 years in New York."
## [3] "Charlie has been playing baseball for 2 years in Berlin.ca"
```

2.14.4 Q1

```
s1 <- seq(from = 1, to = 100, length.out = 7)
s2 <- s1 > 50
s3 <- s1 <= 80
```

2.14.4 Q2

```
s1[s2 & s3]
```

```
## [1] 50.5 67.0
```

```
intersect(s1[s2], s1[s3])
```

```
## [1] 50.5 67.0
```

2.14.4 Q3

```
x <- 1:200  
x1 <- x %% 7 == 0  
x2 <- x %% 2 != 0  
x[x1 & x2]
```

```
## [1] 7 21 35 49 63 77 91 105 119 133 147 161 175 189
```

```
intersect(x[x1], x[x2])
```

```
## [1] 7 21 35 49 63 77 91 105 119 133 147 161 175 189
```