Class Prep 3 | 2.2.1 – 2.2.2

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Section 2.2.1 Binary Numbers

```r
as.integer(2^31 - 2)
```

```
## [1] 2147483646
```

```r
as.integer(2^31 - 1)
```

```
## [1] 2147483647
```

```r
as.integer(2^31)
```

```
## Warning: NAs introduced by coercion to integer range
```

```
## [1] NA
```

```r
-2147483646L
```

```
## [1] -2147483646
```

```r
-2147483646L - 1L
```

```
## [1] -2147483647
```

```r
-2147483646L - 2L
```

```
## Warning in -2147483646L - 2L: NAs produced by integer overflow
```

```
## [1] NA
```

```r
-2147483646L
```

```
## [1] -2147483646
```

```r
as.integer(0.5)
```

```
## [1] 0
```

```r
as.integer(1.9)
```

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

```r
0xFACE
```

```
## [1] 64206
```

```r
2^32
## [1] 4294967296
class(2^36)
## [1] "numeric"
```

Section 2.2.2 Floating Point Numbers

```
2^31
```

```
## [1] 2147483648
```

```
2^40
```

```
## [1] 1.099512e+12
```

```
0/0
```

```
## [1] NaN
```

```
NaN == NaN
```

```
## [1] NA
```

```
sqrt(-1)
```

```
## Warning in sqrt(-1): NaNs produced
```

```
## [1] NaN
```

```
Inf - Inf
```

```
## [1] NaN
```

```
Inf + Inf
```

```
## [1] Inf
```

```
c(1, 2, 3, 4, NA, 5, 6)
```

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

```
matrix(c(1, 2, NA, 4, NA, 6, NA, 8, 9), 3)
```

```
##      [,1] [,2] [,3]
## [1,]    1    4   NA
## [2,]    2   NA    8
## [3,]   NA    6    9
```

```
1/0
```

```
## [1] Inf
```

```
1/Inf
```

```
## [1] 0
```

```
Inf/Inf
```

```
## [1] NaN
```

```
Inf == Inf

## [1] TRUE

Inf == -Inf

## [1] FALSE

Inf > 100

## [1] TRUE

Inf < 100

## [1] FALSE

-Inf > 100

## [1] FALSE

1/-0

## [1] -Inf

-0

## [1] 0

1 / -Inf

## [1] 0

1/sqrt(-0)

## [1] -Inf
```