

課題

$x=(1, 0, 1, 0, 0, 0, 0, 0), (0, 0, 0, 0, 0, 0, 0, \sqrt{2})$ を与えた時の FFT を、R の関数 `fft` により計算するスクリプトを作成し、グラフを作成せよ。

スクリプト

```
fft <- fft(x)
```

```
re <- Re(fft)
```

```
im <- Im(fft)
```

```
plot(0:(length(x)-1), re, ylim = c(-2, 2), xlab = ("x"), ylab = ("re(y)", type = "h",
main = "FFT waveform")
points(0:(length(x)-1), re, pch=16)
abline(h=0, lty=2)
```

```
plot(0:(length(x)-1), im, ylim = c(-2, 2), xlab = ("x"), ylab = ("im(y)", type = "h",
main = "FFT waveform")
points(0:(length(x)-1), im, pch=16)
abline(h=0, lty=2)
```

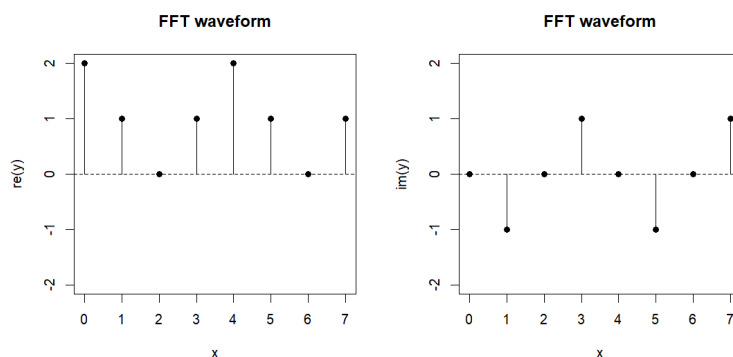
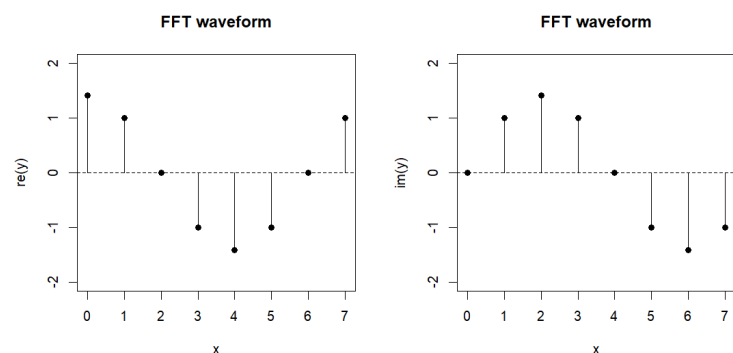


図 1 入力(1, 0, 1, 0, 0, 0, 0, 0)

図 2 入力(0, 0, 0, 0, 0, 0, 0, $\sqrt{2}$)