

Chapter 1 Problem 7

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Problem 7 goes over autocovariance functions and autocorrelations functions, i.e. acfs.

For a moving average process of the form $x_t = w_{t-1} + 2w_t + w_{t+1}$, where w_t are independent with zero means and variance σ_w^2 , determine the autocovariance and autocorrelation functions as a function of lag $h = s - t$ and plot the ACF as a function of h .

For the autocovariance and autocorrelation function derivations, see the file `ch1Problem7Scanned.pdf` in this repository.

```
#ACF as a function of h
points=data.frame(h=c(-5,-4,-3,-2,-1,0,1,2,3,4,5),rho=c(0,0,0,1/6,4/6,1,4/6,1/6,0,0,0))
plot(points,xlab="Lag",ylab="Autocorrelation")
```

