The normal distribution is a widely-used model for populations and processes.

1. The normal density function. (parameters $\mu$, $\sigma$)

2. Important properties including the 68%-95%-99.7% rule.

3. When to use the model.

4. Parameters and statistics.

5. Computations using the normal model. (using \texttt{pnorm()} and \texttt{qnorm()})

6. Fitting a normal model. (The “real” model and the “fitted” model.)

```
> xbar=98.25
> s=.73
> pnorm(99,xbar,s)  # area to left of 99 under normal density
[1] 0.8478833  # mu=xbar and sigma=s
> pnorm(98,xbar,s)
[1] 0.3660002
> qnorm(.75,xbar,s)  # x-value such that area to left is .75
[1] 98.74238
> pnorm( qnorm(.75,xbar,s), xbar,s)  # pnorm and qnorm are inverses
[1] 0.75
```

**Homework**

1. Read Devore and Farnum Section 1.4.

2. Do problems 1.4.36 and 1.4.38 of Devore and Farnum. Note that these problems are about models. There are no data to accompany these problems.
Temperatures of Calvin students

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Model of Calvin Student Temperatures