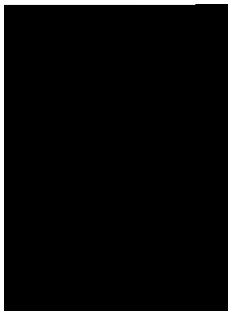

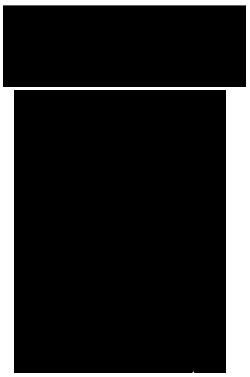

–

exceed 2.85, so the sum of the binomial probability for these variables comprise the lower tail of the two-sided p-value.

Example 6.4.1

With a null hypothesis of $\mu = 100$ and $\sigma = 14$, how many samples are required at the $\alpha = 0.05$ level of significance to achieve a power $(1 - \beta)$ of 60% for the alternative hypothesis $\mu = 110$. **Larsen & Marx (2006, p 454-455)** derive the answer, but it is solved in a few lines in Matlab:

```
muo=100;sigma=14;Power=.6;muh1=103;
N = sampsizepwr('z',[muo sigma],muh1,Power,[],'tail','right');
```

The answer in Matlab is 79, but in Larsen & Marx is 78. Carrying out the Larsen & Marx calculations to full double precision reveals that N=78.1925 samples are required to achieve a

```
    tl='Figure 6.2.2';
    figure622=1;
    yup=25.25;
elseif K==2
    tl='Figure 6.2.3';
    figure623=1;
    yup=26h12 Df 01 Tf 0 -1.185z(elseif K)18(==2)]TJ 0 0 -1.15if K==2
```