Homework Solutions
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Exercise 25

The test failed for 5 out of 80, or a sample proportion of $\hat{p} = \frac{5}{80} = 0.0625$. To find a 92% confidence interval, we need to calculate the value of z. It will be the value that cuts off an upper tail of 0.04 and a lower tail of 0.04, leaving 0.92 in the middle. Thus, z is the 4th percentile (or the 96th percentile). Use `invNorm(.04)` to get -1.751. Or you could use `invNorm(.96)` and get 1.751.

$$\hat{p} \pm z\sqrt{\frac{\hat{p}(1-\hat{p})}{n}} = 0.0625 \pm 1.751\sqrt{\frac{(0.0625)(0.9375)}{80}}$$
$$= 0.0625 \pm 0.04378.$$