Assignment 9.2

Ans1

pnorm(-1.680919)

[1] 0.04638932

Ans 2

The method for finding the *p*-value *is* based on the alternative hypothesis:

$2 \times P(Z \geq |z|)$ for $Ha : p \neq po$ where $|z|$ is the absolute value of z
$P(Z \geq z)$ for $Ha : p > po$
$P(Z \leq z)$ for $Ha : p < po$

we are using $Ha : p < .40$ so our *p*-value will be found from $P(Z \leq z) = P(Z \leq -2.62)$ and from Standard Normal Table this is equal to 0.0044.

We compare the *p*-value to alpha, which we will let alpha be 0.05. Since 0.0044 is less than 0.05 we will reject the null hypothesis and decide in favor of the alternative, *H*a.

The *p*-value= .004 indicates that we should decide in favor of the alternative hypothesis.

The "*Z*-value" (-2.62) is the test statistic. It is a standardized score for the difference between the sample *p* and the null hypothesis value $p = .40$. The *p*-value *is* the probability that the *z*-score would lean toward the alternative hypothesis as much as it does if the true population really was $p = .40$.