# SESSION 9: Statistical Inference

# Assignment 2

1. Calculate the p-value for the test in Problem no 2.

```
a <- 5
s <- 2
n <- 20
xbar <- 7
z <- (xbar-a)/(s/sqrt(n))
z
[1] 4.472136
2*pnorm(-abs(z))
[1] 7.744216e-06
```

2. How do you test the proportions and compare against hypothetical props? Test hypothesis: proportion of automatic cars is 40%

```
prop.test(x, n, p = NULL, alternative = c("two.sided", "less", "greater"),
conf.level = 0.95, correct = TRUE)
```

$2 \times P(Z \geq | z | )$ for $H_a : p \neq p_o$ where |z| is the absolute value of z

$P(Z \geq z )$ for $H_a : p > p_o$

$P(Z \leq z)$ for $H_a : p < p_o$