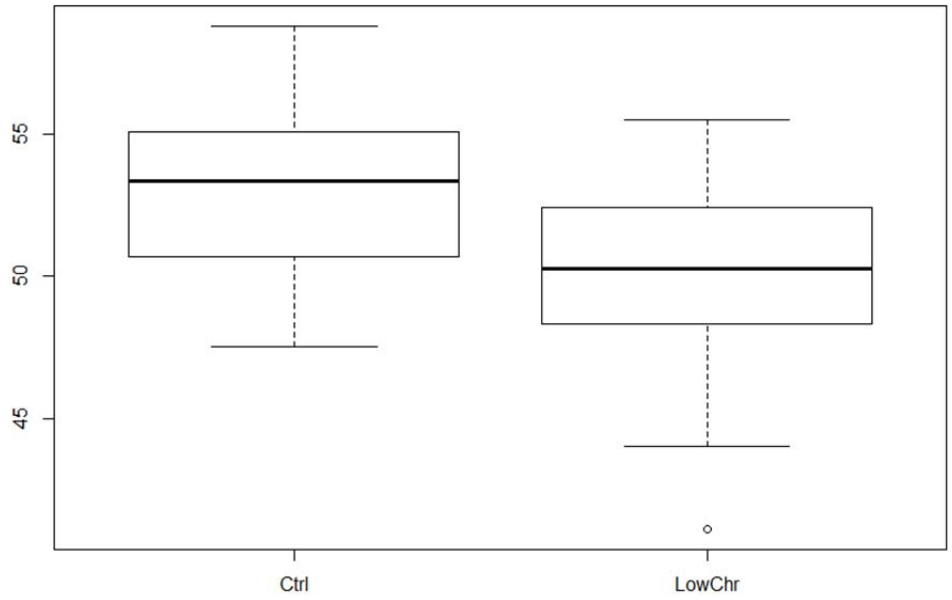
1.A)



B) df1 = num df = df_{cntrl} = 9

df2 = denom df = df_{LowChr} = 13

$H_0: \frac{\sigma_1}{\sigma_2} = \frac{\sigma_{cntrl}}{\sigma_{LowChr}} = 1$

$H_1: \frac{\sigma_1}{\sigma_2} = \frac{\sigma_{cntrl}}{\sigma_{LowChr}} \neq 1$

Test Statistic, $F = \frac{s_1^2}{s_2^2} =$ 0.78978 ; Rejection Region, F>3.312032 or F<0.261056.

P-value = 0.7373 > α (=0.05), which means we fail to reject the null hypothesis that the true ratio of variances ($\frac{\sigma_{cntrl}}{\sigma_{LowChr}}$) is equal to 1 with 95% confidence.

C) Levene test P value = 0.6789 > α (=0.05), which means we fail to reject (with 95% confidence) the null hypothesis that the true ratio of variances ($\frac{\sigma_{cntrl}}{\sigma_{LowChr}}$) is equal to 1.

D) As we fail to reject that $\frac{\sigma_{cntrl}}{\sigma_{LowChr}} = 1$, pooled variance t-test would be preferred.

E) $H_0: \mu_{cntrl} - \mu_{LowChr} = 0$

$H_0: \mu_{cntrl} - \mu_{LowChr} \neq 0$

Test statistic, t = 2.1709

p-value = 0.041 < α (=0.05), which means we can reject null hypothesis H_0 with 95% confidence.

F)

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            Df Sum Sq Mean Sq F value Pr(>F)
Trt          1  66.25   66.25   4.713  0.041 *
Residuals   22 309.26   14.06
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Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
```

Comparing the results to E, we see that the p value of ANOVA test is 0.041 , which is the same as the p-value obtained from two-sample t-test. And F-value obtained from ANOVA is $4.713 = 2.1709^2 = t^2$