p8130 homework 5

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11/15/2020

Problem 1

```
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  antibody %>% pull(Altered) and antibody %>% pull(Normal)
## W = 8582, p-value = 0.01
## alternative hypothesis: true location shift is not equal to 0
```
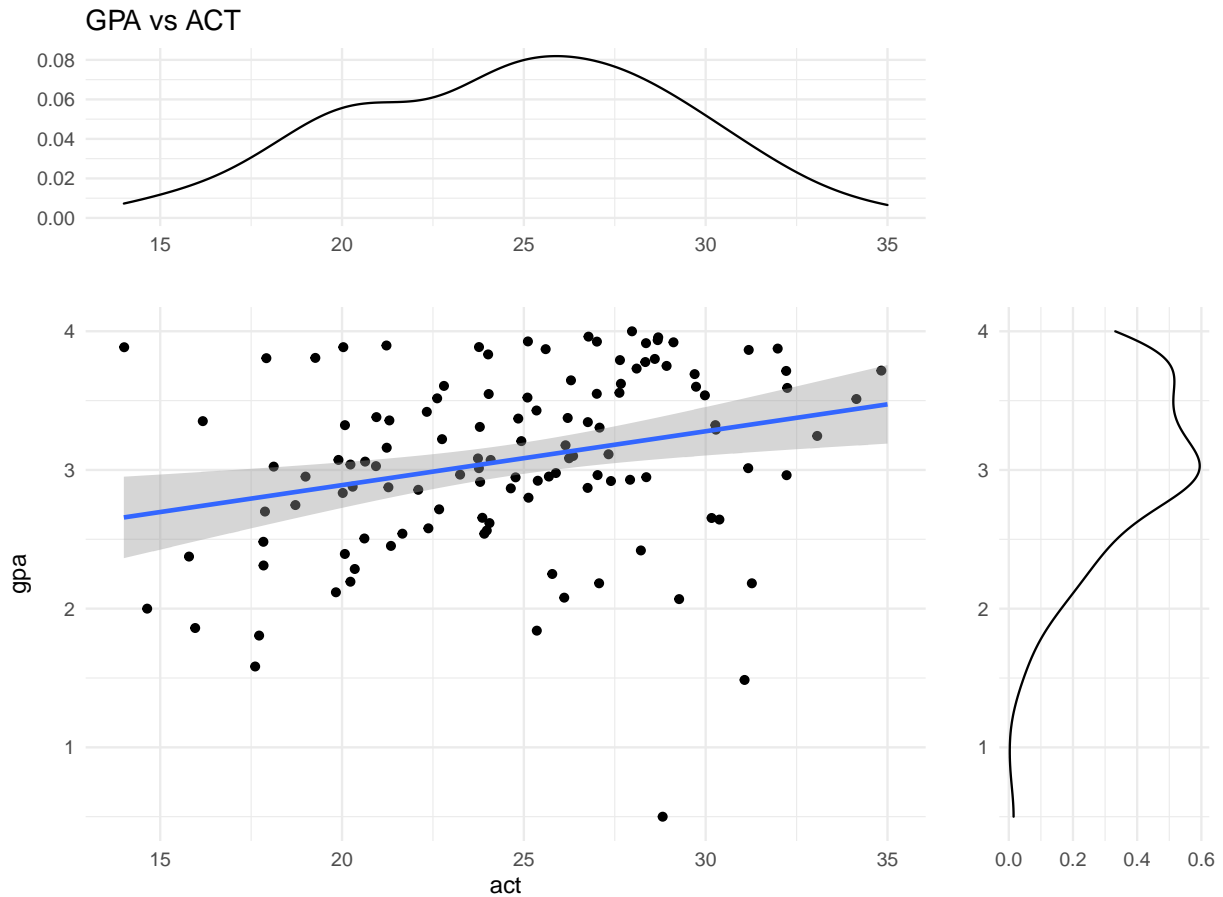
Problem 2

Problem 3

Table 1: Data summary

Name	gpa
Number of rows	120
Number of columns	2
Column type frequency:	
numeric	2
Group variables	None

Variable type: numeric

skim_variable	n_missing	complete_rate	mean	sd	p0	p25	p50	p75	p100
gpa	0	1	3.07	0.64	0.5	2.69	3.08	3.59	4
act	0	1	24.73	4.47	14.0	21.00	25.00	28.00	35

GPA vs ACT

```
## 
## Call:
## lm(formula = gpa ~ act, data = gpa)
## 
## Residuals:
##     Min      1Q  Median      3Q     Max 
## -2.7400 -0.3383  0.0406  0.4406  1.2274 
## 
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)    
## (Intercept)   2.1140     0.3209    6.59  1.3e-09 ***
## act           0.0388     0.0128    3.04   0.0029 ** 
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
## 
## Residual standard error: 0.623 on 118 degrees of freedom
## Multiple R-squared:  0.0726, Adjusted R-squared:  0.0648 
## F-statistic: 9.24 on 1 and 118 DF,  p-value: 0.00292
```