

shortened

2025-06-24

```
library("readr")
library("dplyr")
```

```
##
## Attaching package: 'dplyr'
## The following objects are masked from 'package:stats':
##
##   filter, lag
## The following objects are masked from 'package:base':
##
##   intersect, setdiff, setequal, union
```

```
library("ggplot2")
library("stringr")
library("car")
```

```
## Loading required package: carData
##
## Attaching package: 'car'
## The following object is masked from 'package:dplyr':
##
##   recode
```

```
library("glue")
```

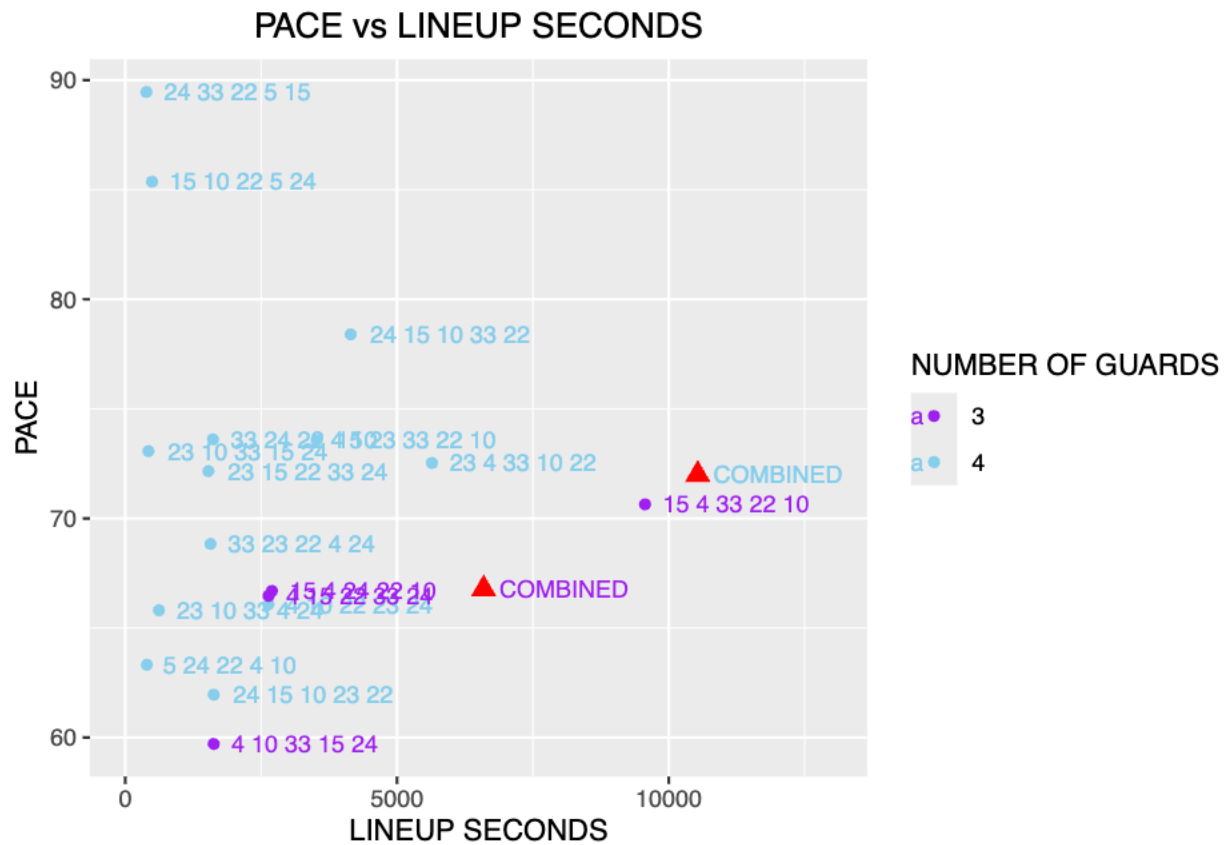
```
season_name <- "2024_25"
```

```
shortened <- readr::read_csv(glue("Desktop/SURA project code/data frames/", season_name, "_shortened.csv"))
```

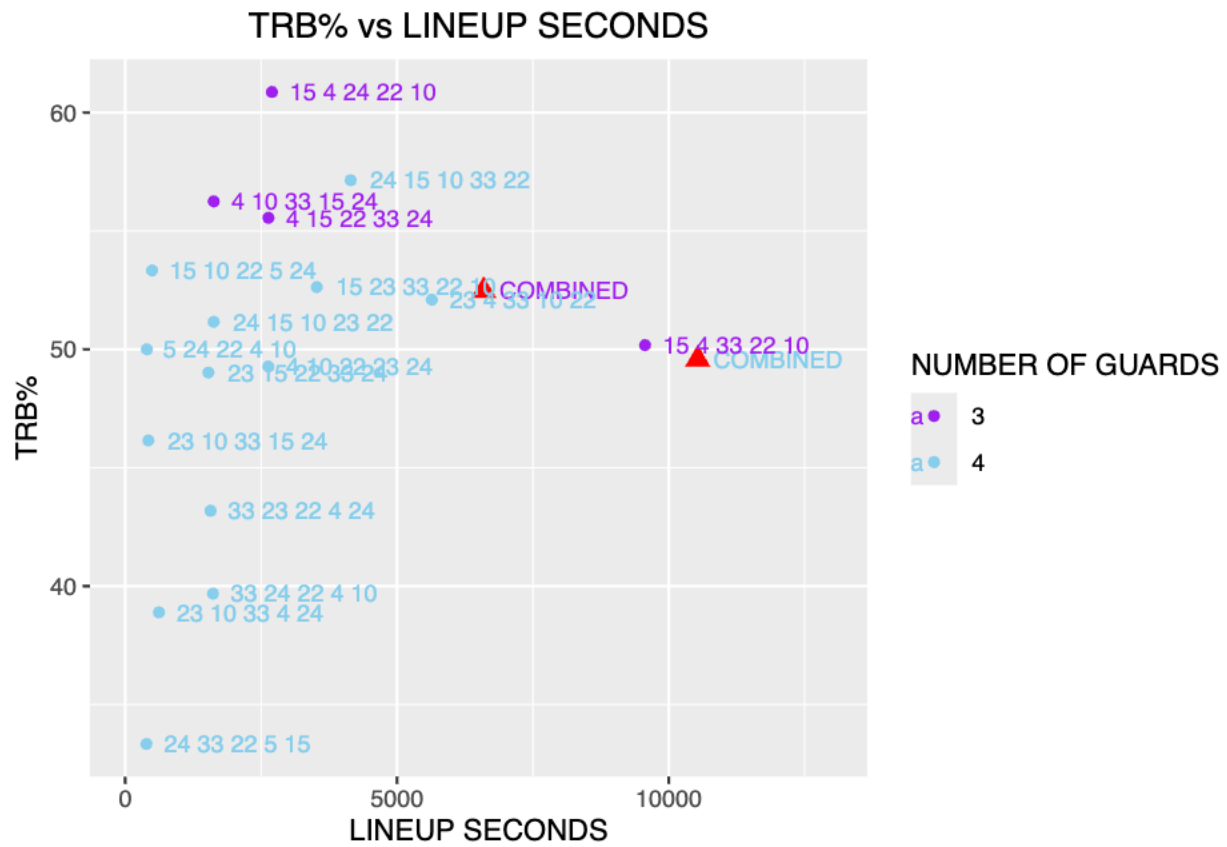
```
## New names:
## Rows: 19 Columns: 26
## -- Column specification
## ----- Delimiter: "," chr
## (7): OPPONENTS, SCORE DIFFERENTIAL WHEN ENTER, QUARTER, NUMBERS, SCORE,... dbl
## (19): ...1, NUMBER OF GUARDS, OPPONENT POSSESSIONS, CMU POSSESSIONS, LIN...
## i Use `spec()` to retrieve the full column specification for this data. i
## Specify the column types or set `show_col_types = FALSE` to quiet this message.
## * `` -> `...1`
```

```
player_lineup <- readr::read_csv(glue("Desktop/SURA project code/data frames/", season_name, "_player_lineup.csv"))
```

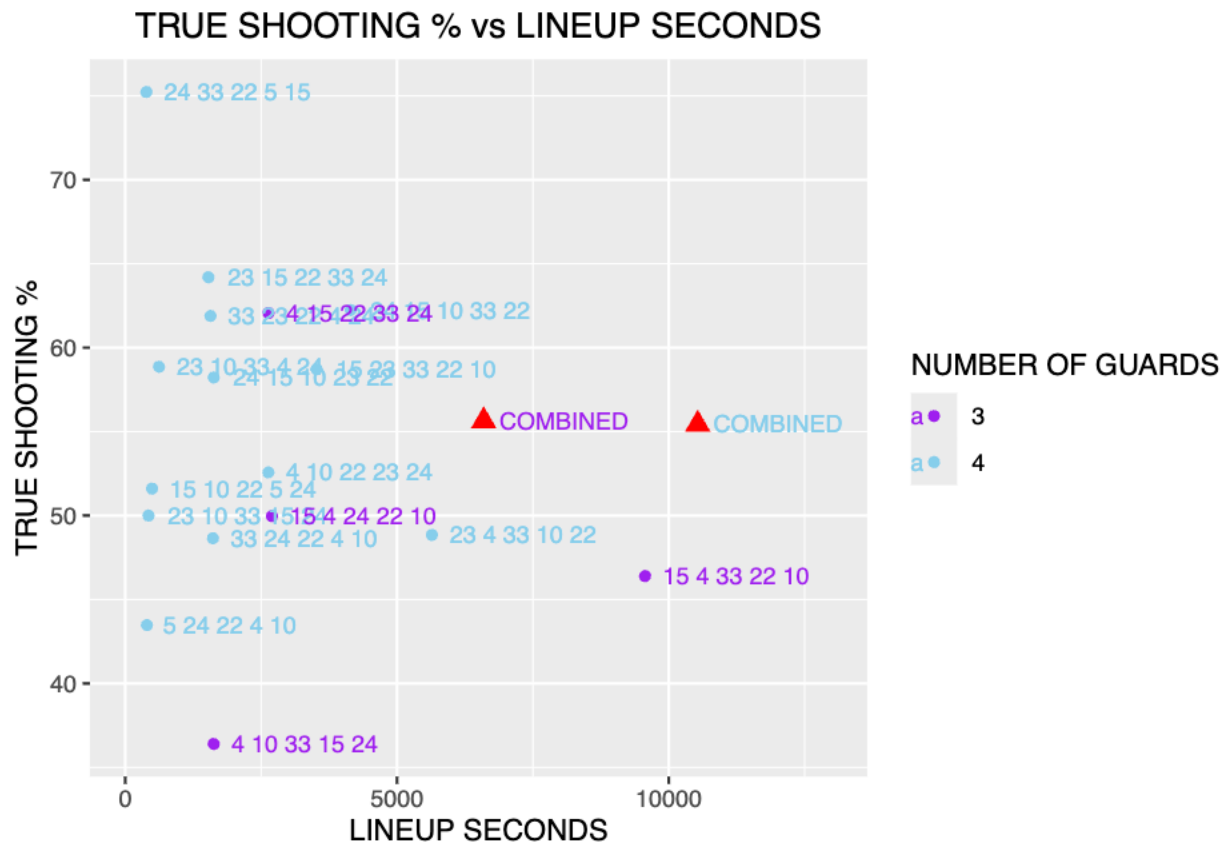
```
## New names:
## Rows: 14 Columns: 24
## -- Column specification
## ----- Delimiter: "," chr
## (5): PLAYER, OPPONENTS, SCORE DIFFERENTIAL WHEN ENTER, QUARTER, LABEL dbl (19):
## ...1, OPPONENT POSSESSIONS, CMU POSSESSIONS, LINEUP SECONDS, OPPON...
```



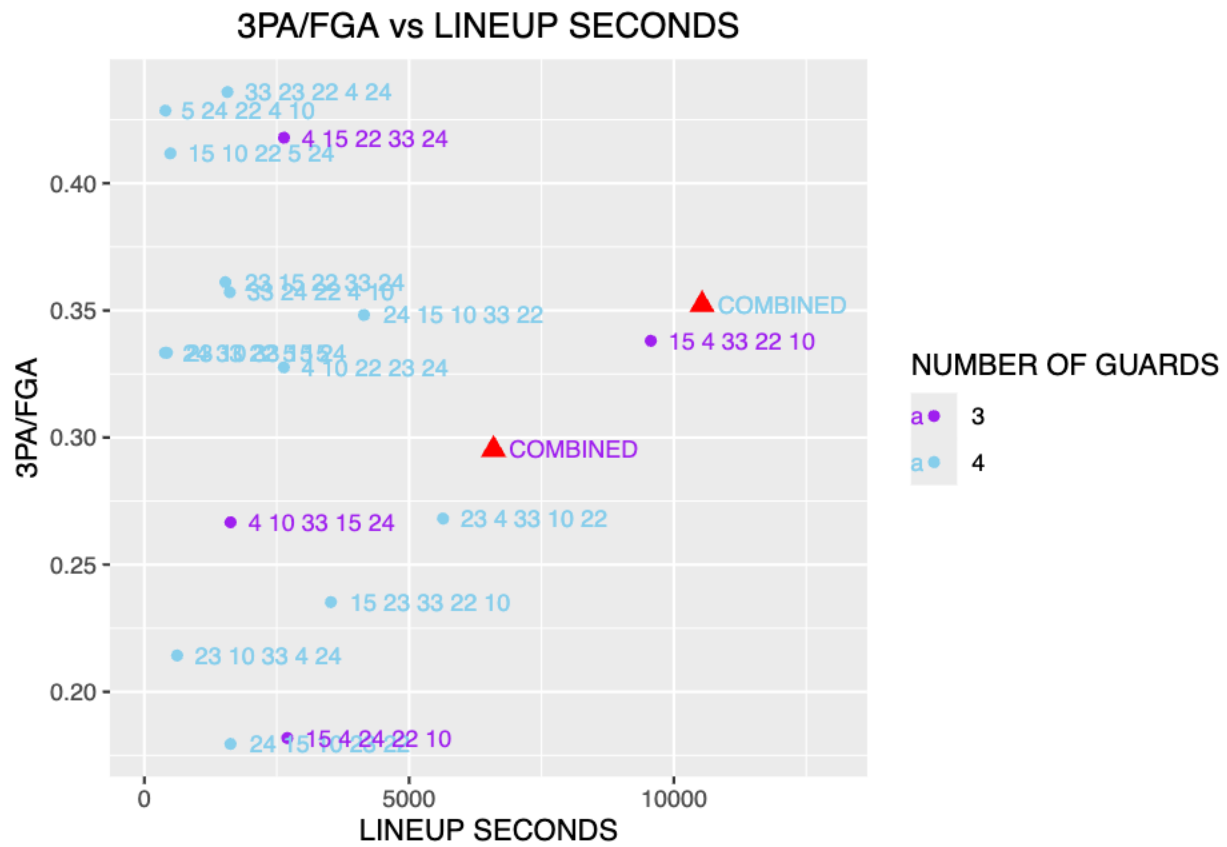
```
ggplot(data = subset(shortened, subset = `NUMBER OF GUARDS` %in% t_f), aes(x = `LINEUP SECONDS`, y = `T
```



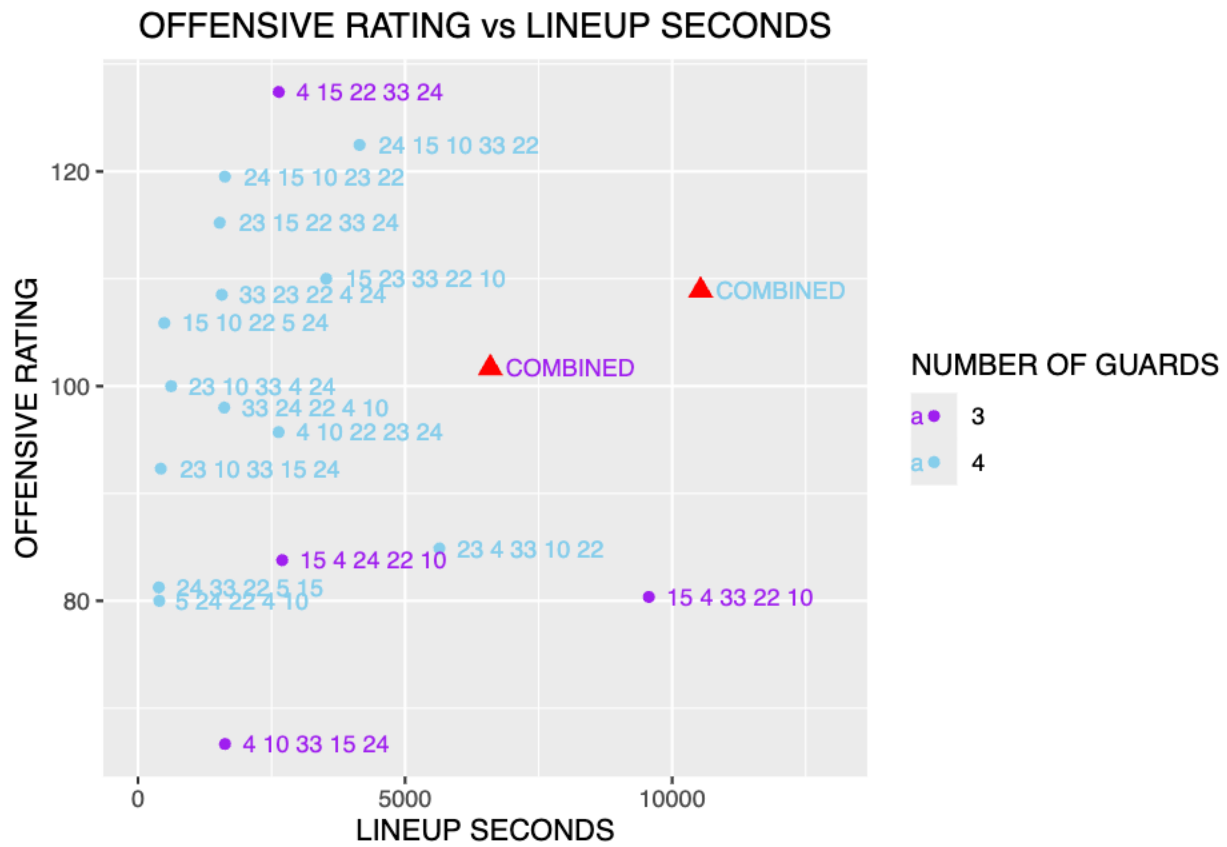
```
ggplot(data = subset(shortened, subset = `NUMBER OF GUARDS` %in% t_f), aes(x = `LINEUP SECONDS`, y = `TRB%`))
```



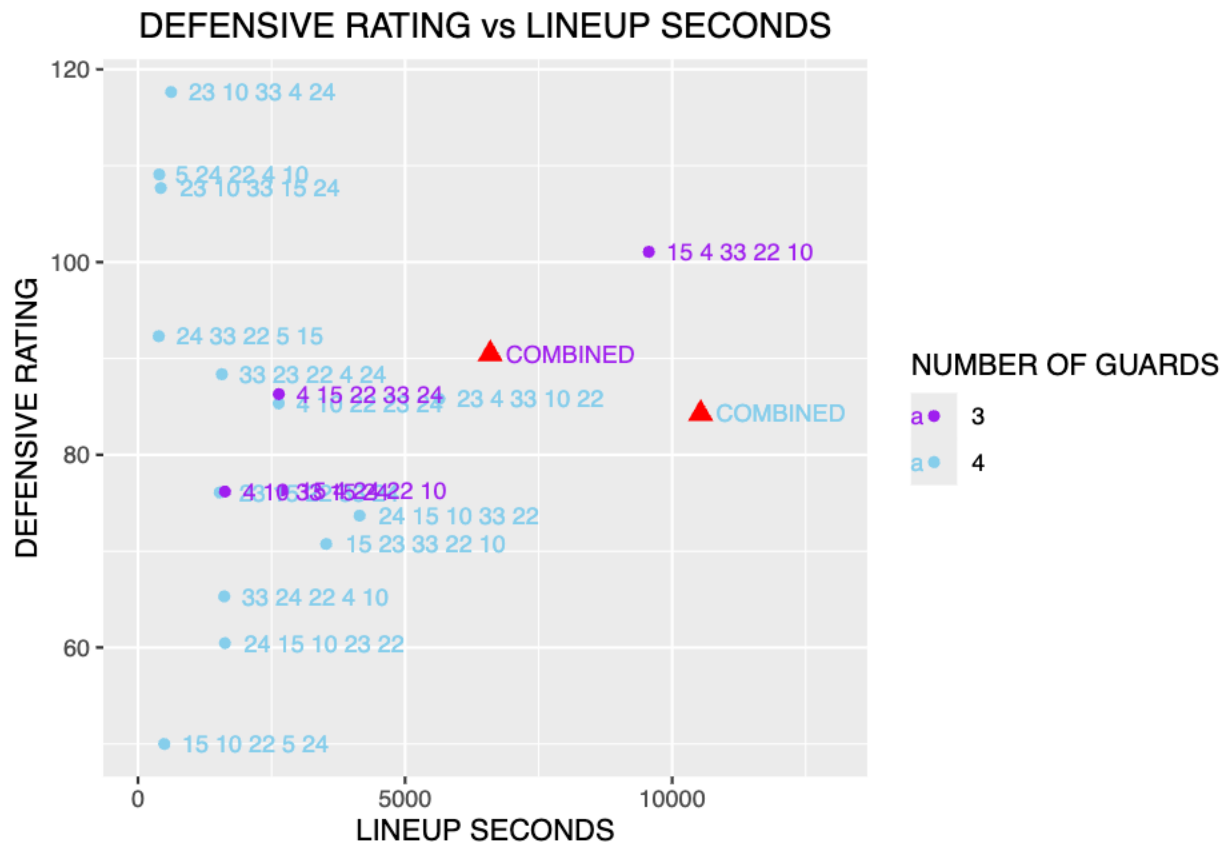
```
ggplot(data = subset(shortened, subset = `NUMBER OF GUARDS` %in% t_f), aes(x = `LINEUP SECONDS`, y = `TRUE SHOOTING %`))
```

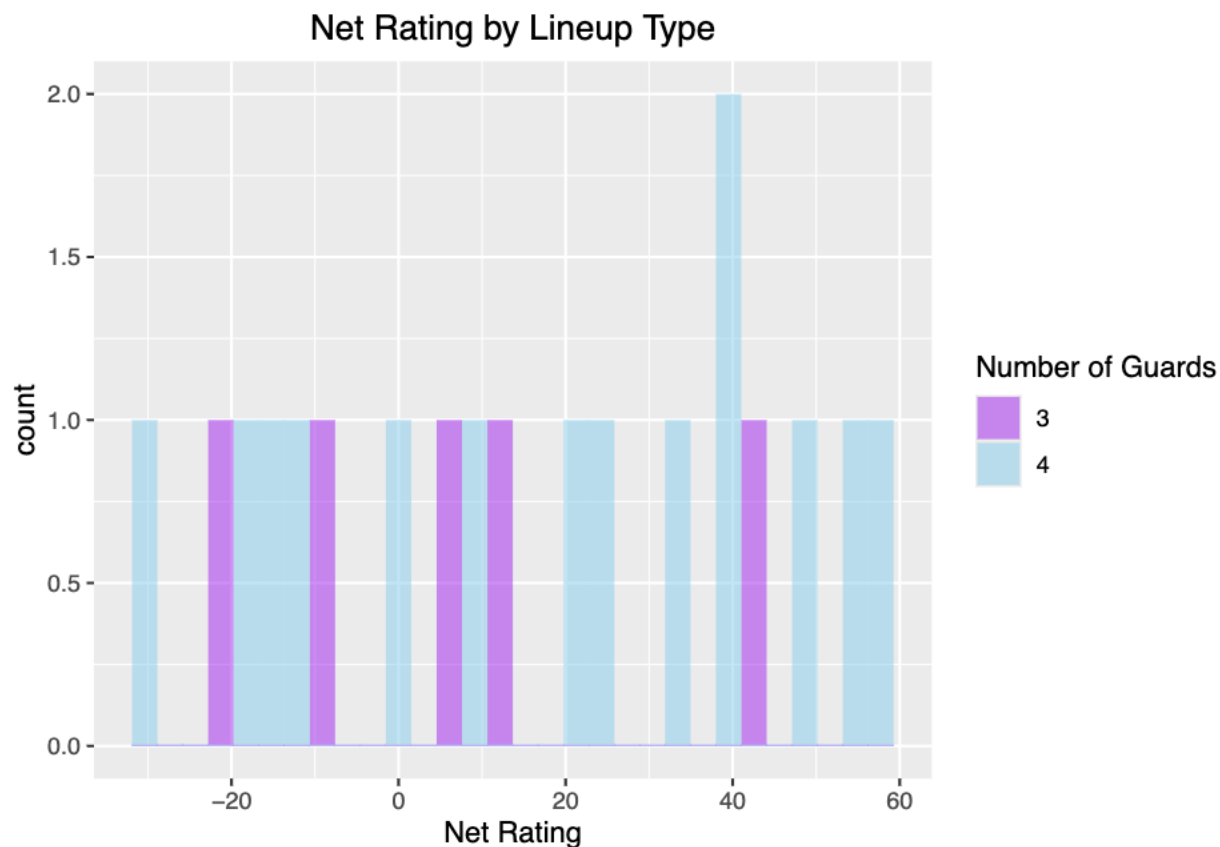


```
ggplot(data = subset(shortened, subset = `NUMBER OF GUARDS` %in% t_f), aes(x = `LINEUP SECONDS`, y = `3PA/FGA`))
```



```
ggplot(data = subset(shortened, subset = `NUMBER OF GUARDS` %in% t_f), aes(x = `LINEUP SECONDS`, y = `OFFENSIVE RATING`))
```





```
shapiro.test(shortened$`NET RATING`)
```

```
##
##  Shapiro-Wilk normality test
##
## data:  shortened$`NET RATING`
## W = 0.94828, p-value = 0.3693
```

```
summary(subset(shortened, subset = `NUMBER OF GUARDS` %in% t_f)$`NET RATING`)
```

```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
## -29.09  -10.29   11.21   15.02  39.19   59.05
```

```
tapply(shortened$`NET RATING`[shortened$`NUMBER OF GUARDS` %in% t_f], shortened$`NUMBER OF GUARDS`[shortened$`NUMBER OF GUARDS` %in% t_f], FUN = summary)
```

```
## $`3`
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
## -20.703  -9.524   7.468   5.909  11.209   41.096
##
```

```
## $`4`
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
## -29.091  -8.522  22.390  18.275  39.217   59.047
```

```
wilcox.test(`NET RATING` ~ `NUMBER OF GUARDS`, data = subset(shortened, `NUMBER OF GUARDS` %in% t_f), exact = FALSE)
```

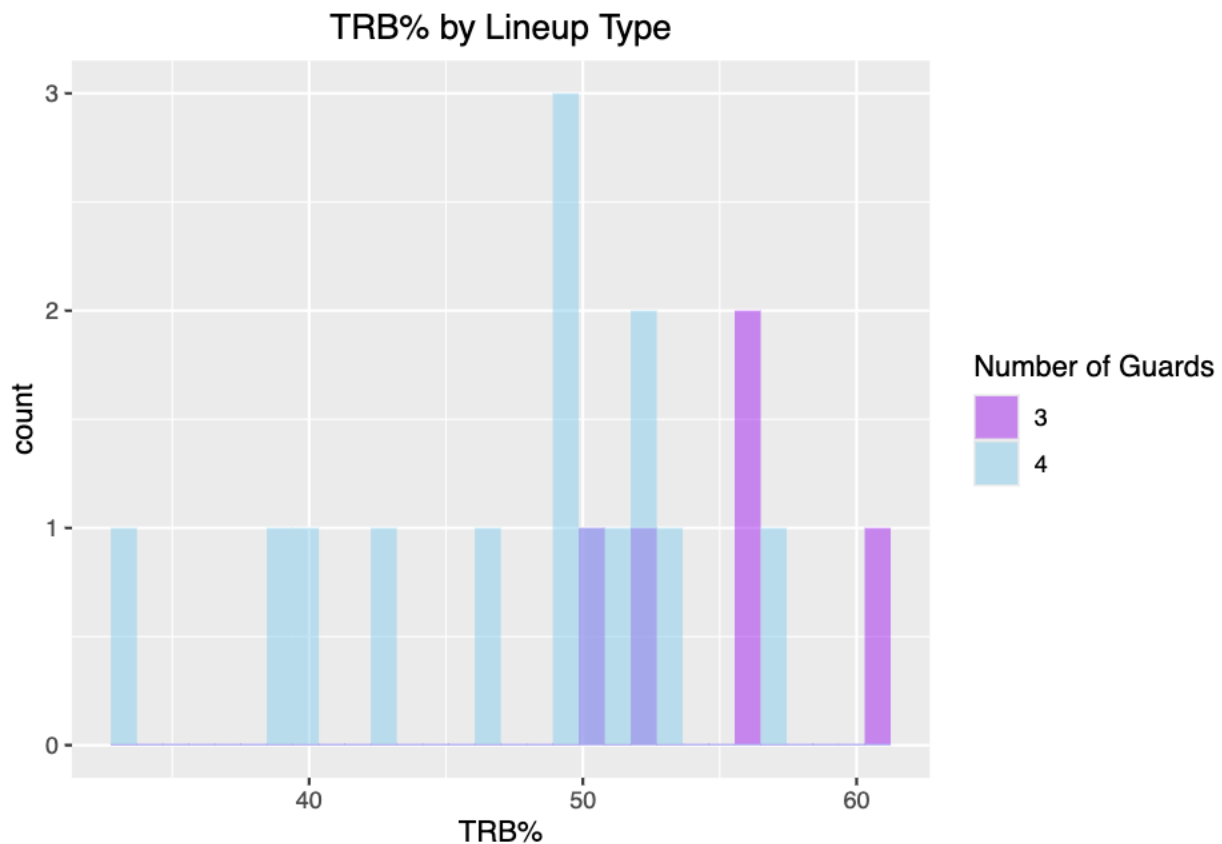
```
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  NET RATING by NUMBER OF GUARDS
```



```
## W = 27, p-value = 0.4875
```

```
## alternative hypothesis: true location shift is not equal to 0
```

```
ggplot(data = subset(shortened, subset = `NUMBER OF GUARDS` %in% t_f), aes(x = `TRB%`, fill = factor(`NUMBER OF GUARDS`)))
```



```
tapply(shortened$`TRB%`[shortened$`NUMBER OF GUARDS` %in% t_f], shortened$`NUMBER OF GUARDS`[shortened$`NUMBER OF GUARDS` %in% t_f], FUN = function(x) {
```

```
## $`3`
```

```
##   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
```

```
##  50.18  52.48   55.56   55.07  56.25   60.87
```

```
##
```

```
## $`4`
```

```
##   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
```

```
##  33.33  43.92   49.43   47.53  51.86   57.14
```

```
wilcox.test(`TRB%` ~ `NUMBER OF GUARDS`, data = subset(shortened, `NUMBER OF GUARDS` %in% t_f), exact = FALSE)
```

```
##
```

```
## Wilcoxon rank sum test with continuity correction
```

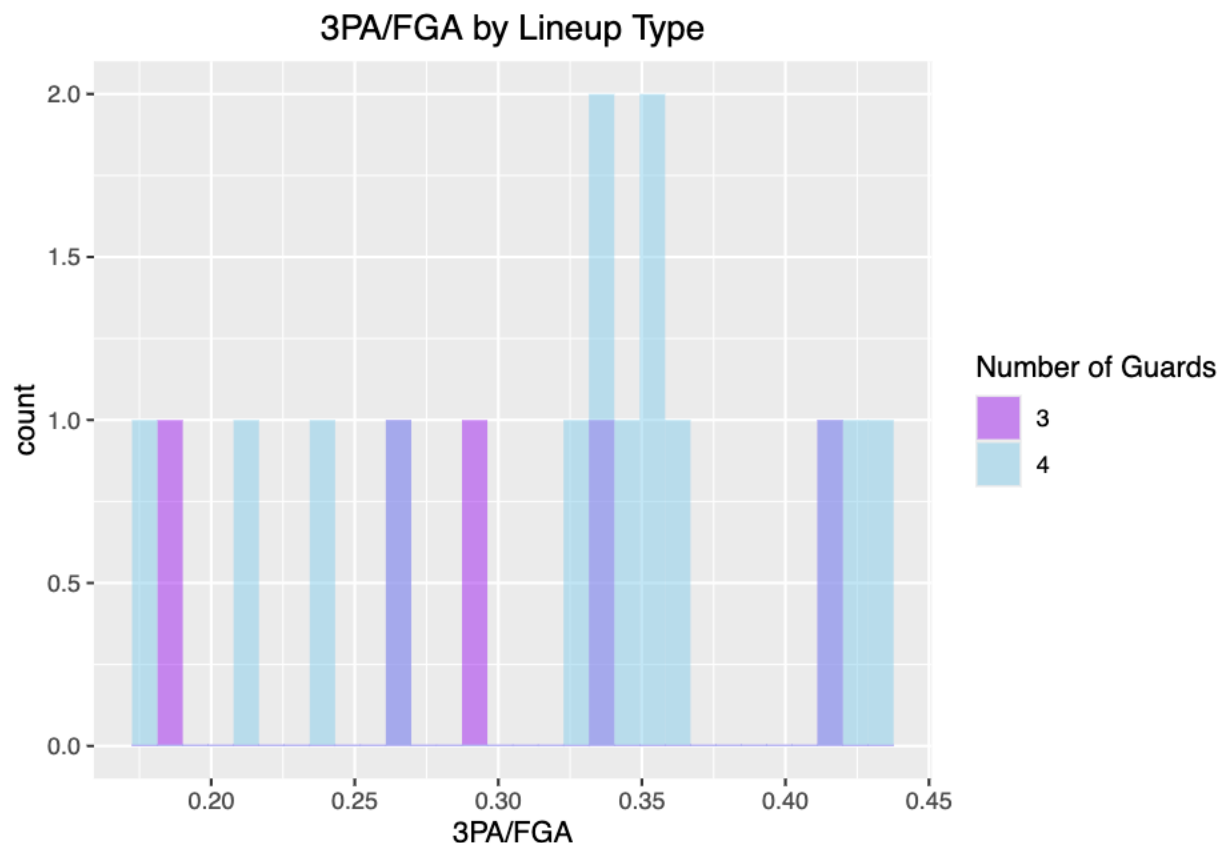
```
##
```

```
## data: TRB% by NUMBER OF GUARDS
```

```
## W = 60, p-value = 0.02331
```

```
## alternative hypothesis: true location shift is not equal to 0
```

```
ggplot(data = subset(shortened, subset = `NUMBER OF GUARDS` %in% t_f), aes(x = `3PA/FGA`, fill = factor(`NUMBER OF GUARDS`)))
```



```
shapiro.test(shortened$`3PA/FGA`)

##
##  Shapiro-Wilk normality test
##
## data:  shortened$`3PA/FGA`
## W = 0.94144, p-value = 0.2799

summary(subset(shortened, subset = `NUMBER OF GUARDS` %in% t_f)$`3PA/FGA`)

##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
## 0.1795 0.2674 0.3333 0.3203 0.3591 0.4359

tapply(shortened$`3PA/FGA`[shortened$`NUMBER OF GUARDS` %in% t_f], shortened$`NUMBER OF GUARDS`[shortened$`NUMBER OF GUARDS` %in% t_f], FUN = summary)

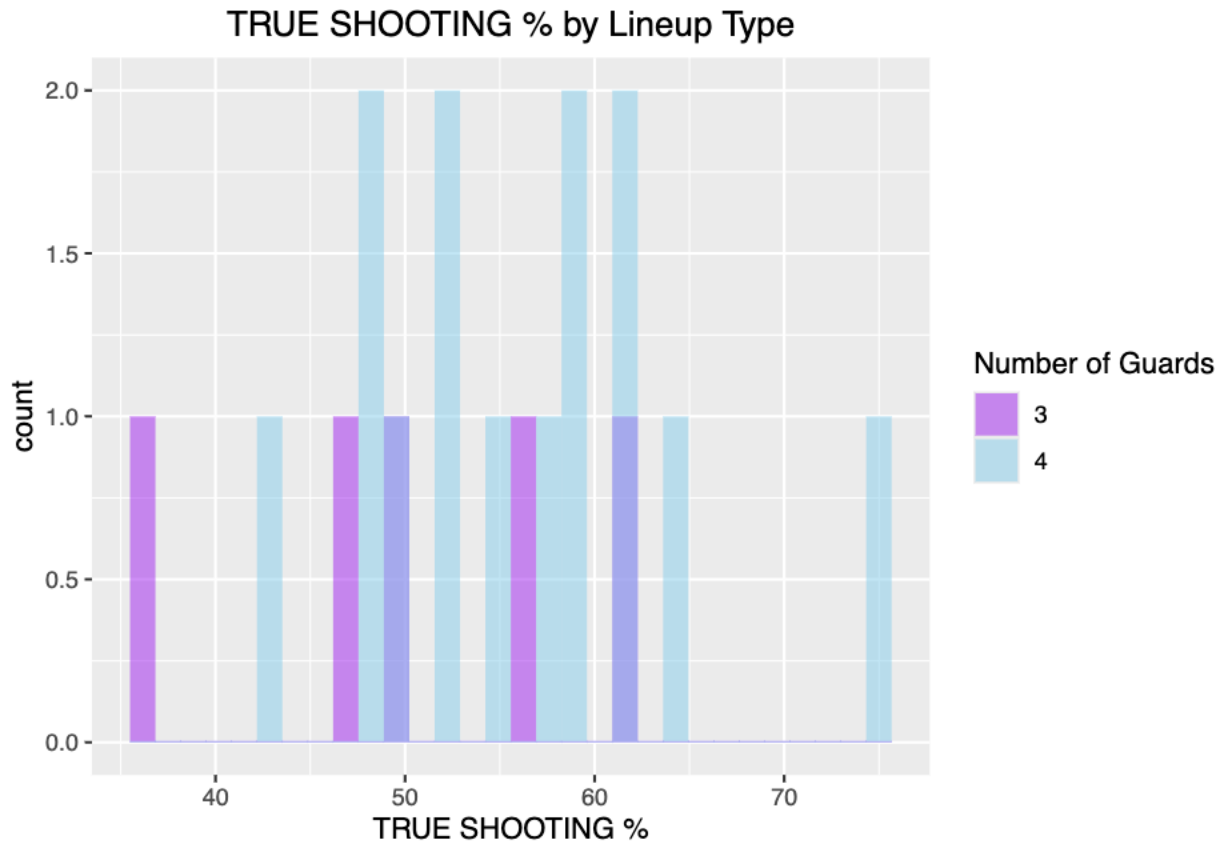
## $`3`
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
## 0.1818 0.2667 0.2953 0.2999 0.3380 0.4179
##
## $`4`
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
## 0.1795 0.2830 0.3408 0.3276 0.3601 0.4359

wilcox.test(`3PA/FGA` ~ `NUMBER OF GUARDS`, data = subset(shortened, `NUMBER OF GUARDS` %in% t_f), exact = FALSE)

##
##  Wilcoxon rank sum test with continuity correction
##
## data:  3PA/FGA by NUMBER OF GUARDS
## W = 27, p-value = 0.4873
```

```
## alternative hypothesis: true location shift is not equal to 0
```

```
ggplot(data = subset(shortened, subset = `NUMBER OF GUARDS` %in% t_f), aes(x = `TRUE SHOOTING %`, fill = `NUMBER OF GUARDS`))
```



```
shapiro.test(shortened$`TRUE SHOOTING %`)
```

```
##
## Shapiro-Wilk normality test
##
## data: shortened$`TRUE SHOOTING %`
## W = 0.97889, p-value = 0.9287
```

```
summary(subset(shortened, subset = `NUMBER OF GUARDS` %in% t_f)$`TRUE SHOOTING %`)
```

```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
## 36.39  49.41  55.44  54.76  60.38  75.23
```

```
tapply(shortened$`TRUE SHOOTING %`[shortened$`NUMBER OF GUARDS` %in% t_f], shortened$`NUMBER OF GUARDS`, FUN = summary)
```

```
## $`3`
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
## 36.39  46.40  49.97  50.09  55.64  62.07
```

```
## $`4`
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
## 43.48  50.40  56.83  56.43  61.14  75.23
```

```
wilcox.test(`TRUE SHOOTING %` ~ `NUMBER OF GUARDS`, data = subset(shortened, `NUMBER OF GUARDS` %in% t_f))
```

```
##
```

```
## Wilcoxon rank sum test with continuity correction
```

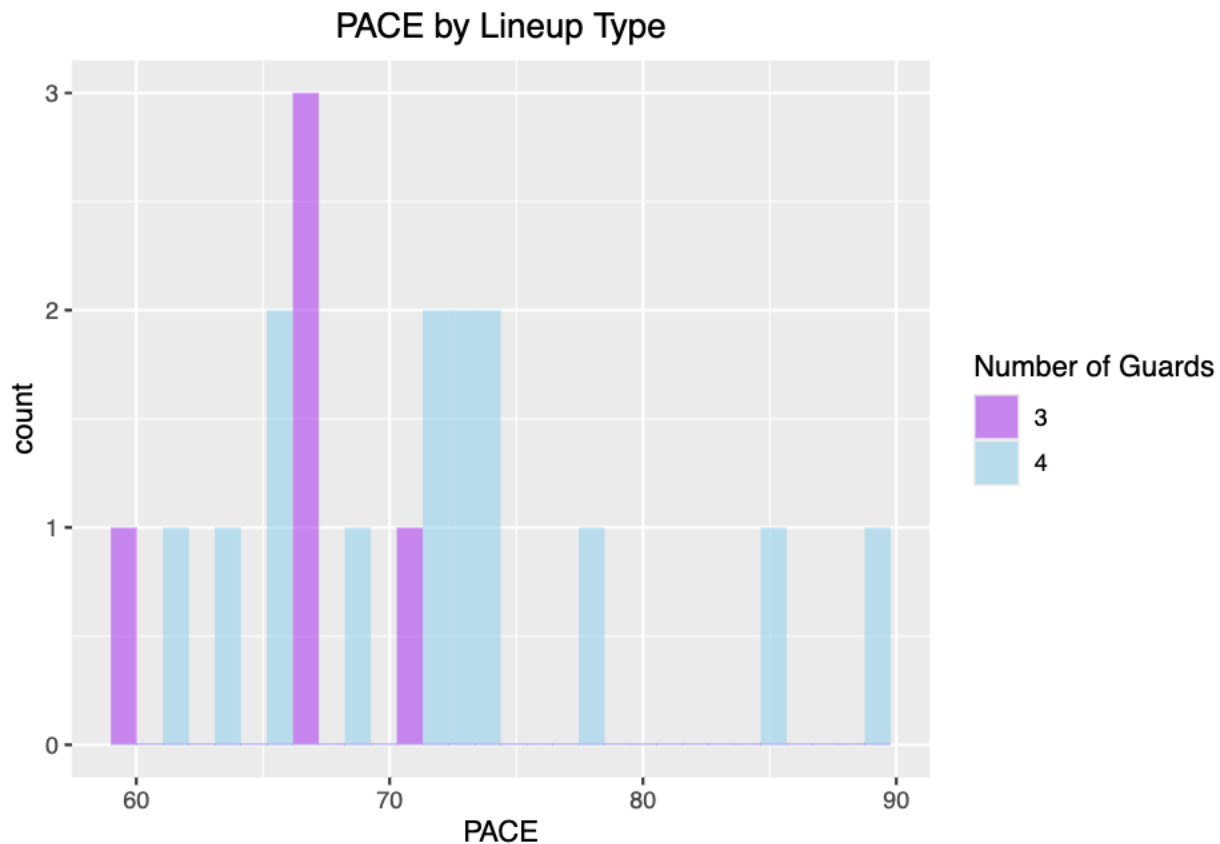
```
##
```

```
## data: TRUE SHOOTING % by NUMBER OF GUARDS
```

```
## W = 22, p-value = 0.2472
```

```
## alternative hypothesis: true location shift is not equal to 0
```

```
ggplot(data = subset(shortened, subset = `NUMBER OF GUARDS` %in% t_f), aes(x = `PACE`, fill = factor(`NUMBER OF GUARDS`)))
```



```
shapiro.test(shortened$`PACE`)
```

```
##
```

```
## Shapiro-Wilk normality test
```

```
##
```

```
## data: shortened$PACE
```

```
## W = 0.91818, p-value = 0.1048
```

```
summary(subset(shortened, subset = `NUMBER OF GUARDS` %in% t_f)$`PACE`)
```

```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
```

```
##  59.71  66.26   70.64   70.86   73.32   89.46
```

```
tapply(shortened$`PACE`[shortened$`NUMBER OF GUARDS` %in% t_f], shortened$`NUMBER OF GUARDS`[shortened$`NUMBER OF GUARDS` %in% t_f], FUN = summary)
```

```
## $`3`
```

```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
```

```
##  59.71  66.46   66.69   66.06   66.78   70.64
```

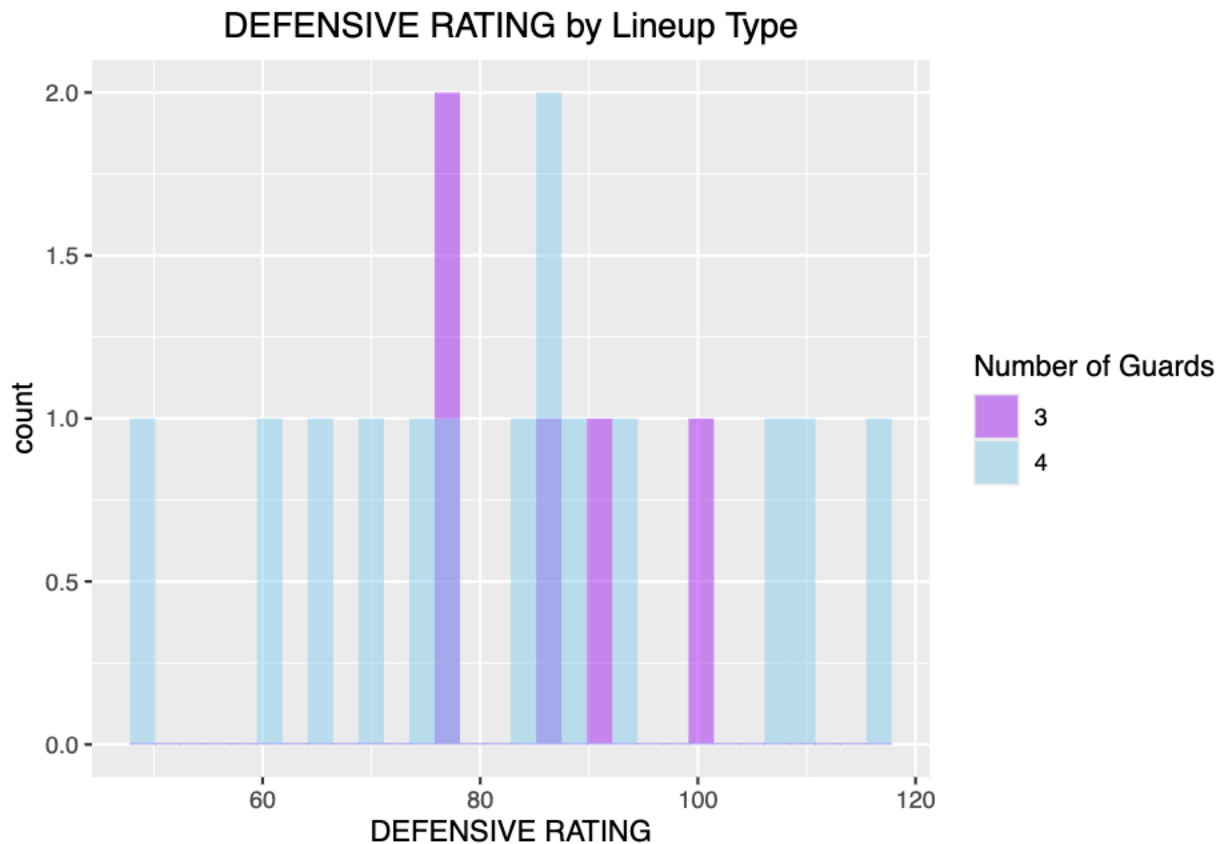
```
##
```

```
## $`4`
```

```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
```

```
##  61.95  66.75   72.34   72.58   73.60   89.46
```

```
wilcox.test(`PACE` ~ `NUMBER OF GUARDS`, data = subset(shortened, `NUMBER OF GUARDS` %in% t_f), exact =
##
## Wilcoxon rank sum test with continuity correction
##
## data: PACE by NUMBER OF GUARDS
## W = 17, p-value = 0.1052
## alternative hypothesis: true location shift is not equal to 0
ggplot(data = subset(shortened, subset = `NUMBER OF GUARDS` %in% t_f), aes(x = `DEFENSIVE RATING`, fill
```

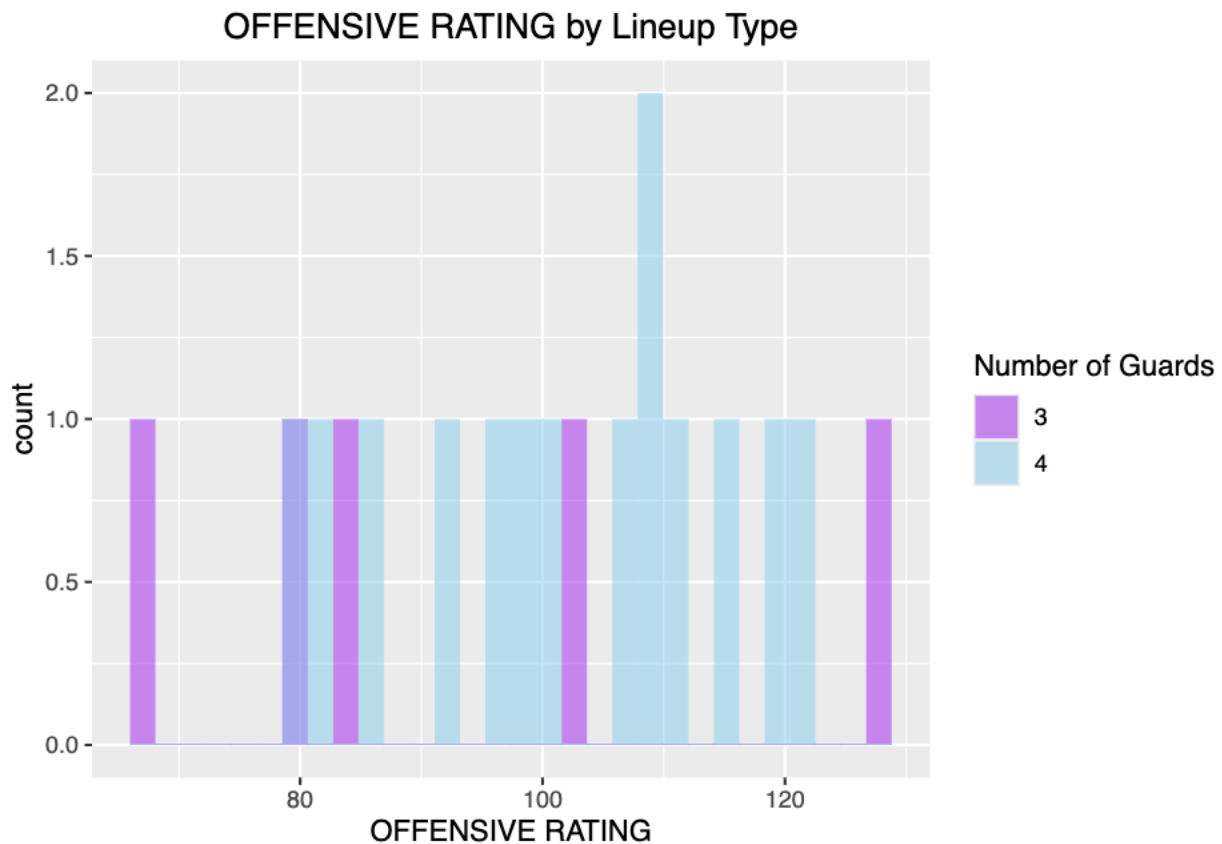


```
shapiro.test(shortened$`DEFENSIVE RATING`)
##
## Shapiro-Wilk normality test
##
## data: shortened$`DEFENSIVE RATING`
## W = 0.98228, p-value = 0.9654
summary(subset(shortened, subset = `NUMBER OF GUARDS` %in% t_f)$`DEFENSIVE RATING`)
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##      50.00  74.89   85.33   84.06   91.39   117.65
tapply(shortened$`DEFENSIVE RATING`[shortened$`NUMBER OF GUARDS` %in% t_f], shortened$`NUMBER OF GUARDS`
## $`3`
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##      76.19  76.32   86.30   86.07   90.48   101.06
```

```
##
## $`4`
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##      50.00  71.49   84.81   83.34   91.32   117.65
wilcox.test(`DEFENSIVE RATING` ~ `NUMBER OF GUARDS`, data = subset(shortened, `NUMBER OF GUARDS` %in% t_f))

##
## Wilcoxon rank sum test with continuity correction
##
## data:  DEFENSIVE RATING by NUMBER OF GUARDS
## W = 42, p-value = 0.5473
## alternative hypothesis: true location shift is not equal to 0
```

```
ggplot(data = subset(shortened, subset = `NUMBER OF GUARDS` %in% t_f), aes(x = `OFFENSIVE RATING`, fill = `NUMBER OF GUARDS`))
```



```
shapiro.test(shortened$`OFFENSIVE RATING`)
```

```
##
## Shapiro-Wilk normality test
##
## data:  shortened$`OFFENSIVE RATING`
## W = 0.97448, p-value = 0.8611
```

```
summary(subset(shortened, subset = `NUMBER OF GUARDS` %in% t_f)$`OFFENSIVE RATING`)
```

```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##      66.67  84.33  100.00   99.08  109.46  127.40
```