

STAT 8010 R Lab 12

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Create the data set

```
x <- c(52, 47, 44, 51, 42, 60, 55, 49, 52, 43, 56, 48, 45, 44, 38)
trt <- rep(c("A", "B", "C"), each = 5)
blk <- rep(1:5, 3)
dat <- data.frame(x = x, trt = trt, blk = as.factor(blk))
```

Two-way ANOVA

```
aov <- aov(x ~ trt + blk, data = dat)
lm <- lm(x ~ trt + blk, data = dat)
anova(lm)
```

```
## Analysis of Variance Table
##
## Response: x
##           Df Sum Sq Mean Sq F value    Pr(>F)
## trt         2   89.2    44.60   7.6239 0.0140226 *
## blk         4  363.6    90.90  15.5385 0.0007684 ***
## Residuals   8   46.8     5.85
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

One-way ANOVA

```
lm2 <- lm(x ~ trt, data = dat)
anova(lm2)
```

```
## Analysis of Variance Table
##
## Response: x
##           Df Sum Sq Mean Sq F value    Pr(>F)
## trt         2   89.2    44.6    1.3041 0.3073
## Residuals  12  410.4    34.2
```

Interaction plot: assessing the additivity assumption

```
interaction.plot(dat$trt, dat$blk,
                 x, las = 1,
```

```
col = 1:5)
```

