**Compared to the baseline category 1 (violent crimes), what is the percentage and the coefficient of being stopped for category 3 (property crimes)?**

fit.2b <- glm (police2$stops ~ factor(police2$crime), family=poisson, offset=log(police2$past.arrests))

summary(fit.2b)

exp(0.16) =1.17

17% more

library(ggplot2)

## 1 create a data frame

df\_check <- data.frame(pred.4,res.4)

head(df\_check)

plot <- ggplot(df\_check, aes(x=pred.4, y=res.4)) + geom\_point()

plot

## better

plot1 <- ggplot(df\_check, aes(x=pred.4, y=res.4)) + geom\_point()

plot1 <- plot1 + labs(x='Predicted', y='Residual')

plot1

##let's add the lines and change the theme

plot2 <- ggplot(df\_check, aes(x=pred.4, y=res.4)) + geom\_point()

plot2 <- plot2 + labs(x='Predicted', y='Residual') + theme\_bw()

plot2 <- plot2+geom\_hline(yintercept=2, linetype="dashed", color = "red")

plot2 <- plot2+geom\_hline(yintercept=-2, linetype="dashed", color = "red")

plot2

**Question 3 divide in group: can you check now with the standardized residual value, will you get overdipersion or not?**

df\_check$stdres <- stdres.4

plot3 <- ggplot(df\_check, aes(x=pred.4, y=stdres)) + geom\_point()

plot3 <- plot3 + labs(x='Predicted', y='Residual') + theme\_bw()

plot3 <- plot3 + geom\_hline(yintercept=2, linetype="dashed", color = "red")

plot3 <- plot3 + geom\_hline(yintercept=-2, linetype="dashed", color = "red")

plot3