Univariable analysis for Log Price variable

```{r}

model.price <- glm(online_only ~ log_price, family = binomial, data = sephora)


sum_model.price <- summary(model.price)


sum_model.price

```

```
Call:
glm(formula = online_only ~ log_price, family = binomial, data = sephora)

Coefficients:
            Estimate Std. Error z value Pr(>|z|)
(Intercept)  -2.3015     0.1370 -16.796   <2e-16 ***
log_price     0.2994     0.0357   8.385   <2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 9791.0  on 8986  degrees of freedom
Residual deviance: 9720.8  on 8985  degrees of freedom
AIC: 9724.8

Number of Fisher Scoring iterations: 4
```

Wald test for Log Price variable

```{r}

# Wald test

wald_price <- round(sum_model.price$coefficients[2]/

sum_model.price$coefficients[2,2],3)
```

```
pvalue_price <- round(2*(1-pnorm(wald_price)),4)
```

$$
\begin{aligned}
&H_0 : \beta_1 = 0 \\
&W = \frac{\hat{\beta}_1}{\hat{SE}(\hat{\beta}_1)} = 8.385 \\
&P\_value = 0
\end{aligned}
$$

According to the Wald test, the independent variable “log price” is statistically significant because its p-values is less than the significant level α=0.25