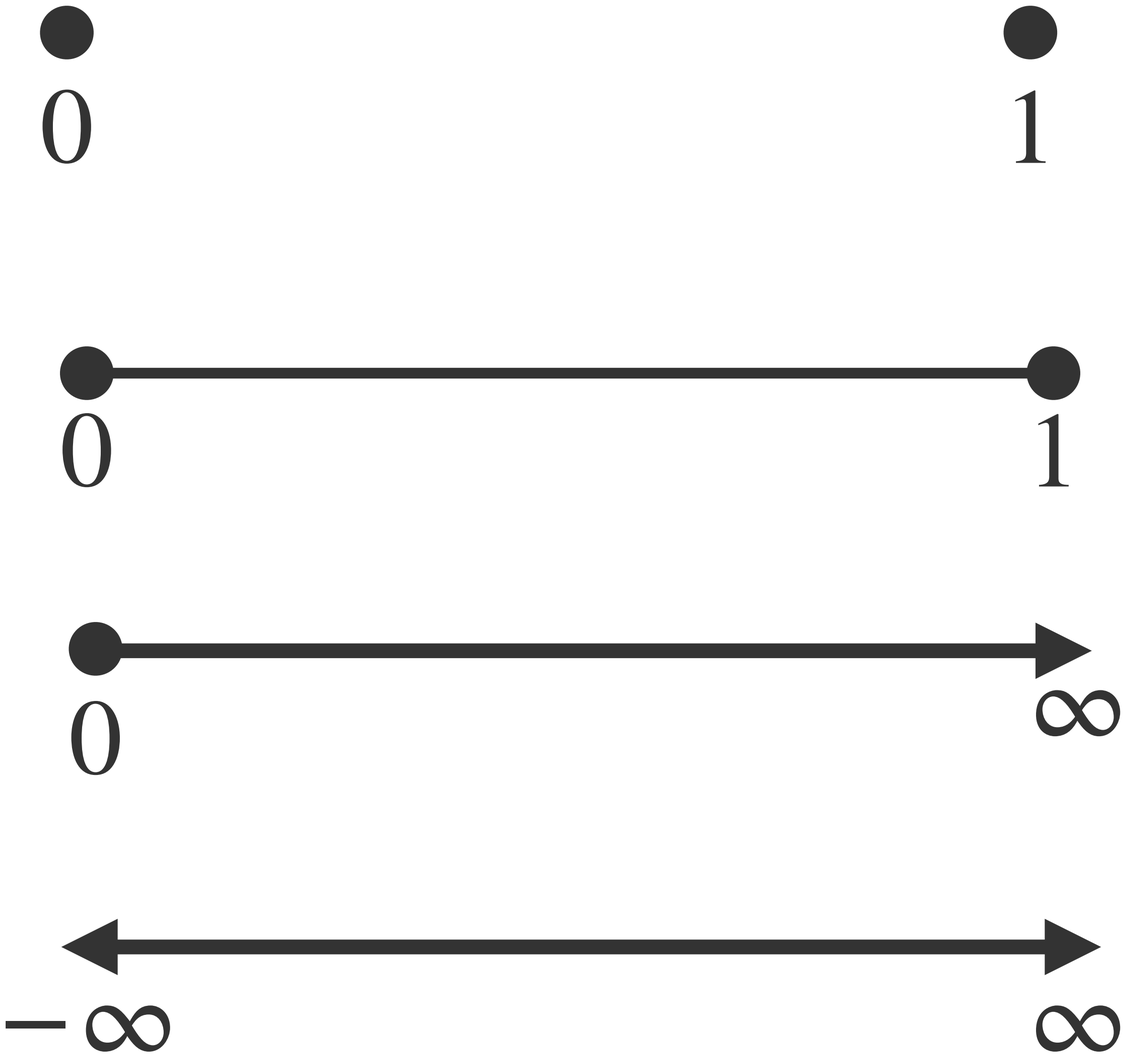
Redefining The Response

original Y

Y as probability

odds of Y

$Y' \in (-\infty, \infty)$



Logistic Regression

$$y = X\beta$$

our link function is

$$g(x) = \log \frac{x}{1-x}$$

which has the inverse

$$g^{-1}(x) = \frac{e^x}{1+e^x}$$

$$y = g^{-1}(X\beta)$$

general case

$$p = \frac{e^{X\beta}}{1+e^{X\beta}}$$

specific case