Logistic Regression Bingo (Online Version)

Names:_____

What equation would you use to calculate the probability from the coefficients you get from a logistic regression model?	Which function from the broom R package can be used to produce nice-looking model output?	If the probability of winning is 0.5, what are the log odds?
What is the pmf for a Bernoulli random variable?	If the probability of winning a bet is 0.7, what are the odds of winning the bet?	Formula for a C% confidence interval of β_j from logistic regression model.
What is a big reason why linear regression provides a poor fit to data with binary outcomes?	A research question with a Bernoulli response.	The formula for odds, in terms of probability

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Card # 1

Answers:

π = Odds / (odds + 1)
Odds = $\pi/(1-\pi)$
$P(Y = y) = \pi^y(1-\pi)^{1-y}$ for $y = 0,1.$
$P(Y = y) = \binom{n}{y}\pi^y(1-\pi)^{n-y}$ for $y = 0, 1, \ldots, n$
$\frac{0.7}{0.3} = 2.333$
Is an individual's exposure to a particular chemical associated with the probability of a cancer diagnosis?
$\log\left(\frac{\pi_i}{1-\pi_i}\right) = \beta_0 + \beta_1 X_i$
A logistic regression model always predicts probabilities between 0 and 1.
broom::tidy()
$\hat{\beta}_j \pm z^* SE(\hat{\beta}_j)$, where z* comes from N(0,1).
$\pi = \frac{\exp(\beta_0 + \beta_1 X)}{1 + \exp(\beta_0 + \beta_1 X)}$
A linear regression model predicts probabilities below 0 and above 1.
Standard Normal distribution (Z-distribution)
Odds range from 0 to infinity.
Log odds range from $-\infty$ to $+\infty$.
Log odds = $\log\left(\frac{.5}{.5}\right) = \log(1) = 0.$
β_1 represents the difference in log odds between those in the treatment group vs. those in the control group.
Independence Assumption: Y_i is independent from Y_j for all $i \neq j$.