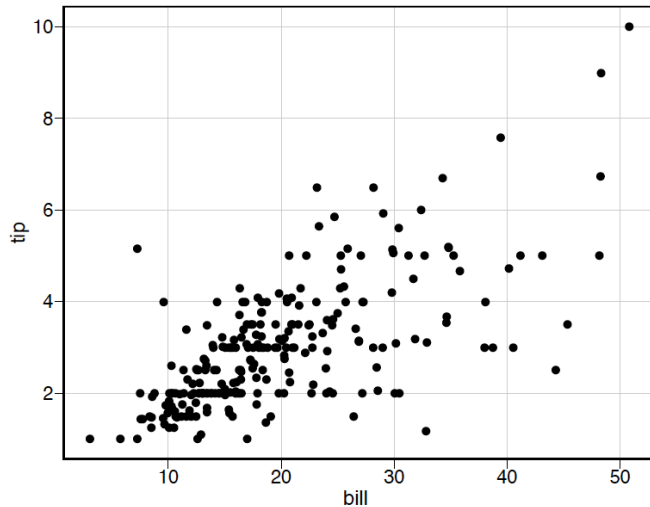


## STAT 101 Regression Worksheet

Name: \_\_\_\_\_

In one restaurant, a food server recorded the following data on all customers they had served during a interval of two and a half months in early 1990. The restaurant, located in a suburban shopping mall, was one of a national chain and served a varied menu. In observance of local law the restaurant ordered seating in a non-smoking sections to patrons who requested it. The data was reported in a collection of case studies for business statistics by Bryant and Smith (1995).



|            | Mean  | Std. Dev |
|------------|-------|----------|
| Tips       | 3.00  | 1.38     |
| Total Bill | 19.79 | 8.90     |

$$r = 0.68$$

1. Calculate the slope ( $b_1$ ) and intercept ( $b_0$ ) of the regression line:

$$b_1 = r \left( \frac{s_y}{s_x} \right) =$$

$$b_0 = \bar{y} - b_1 \bar{x} =$$

2. Given an interpretation of the slope in context.
3. What size tip does the regression model predict for a bill of \$30?
4. One man left a \$3 tip for a \$30 bill. Calculate the residual (the error in regression's prediction).