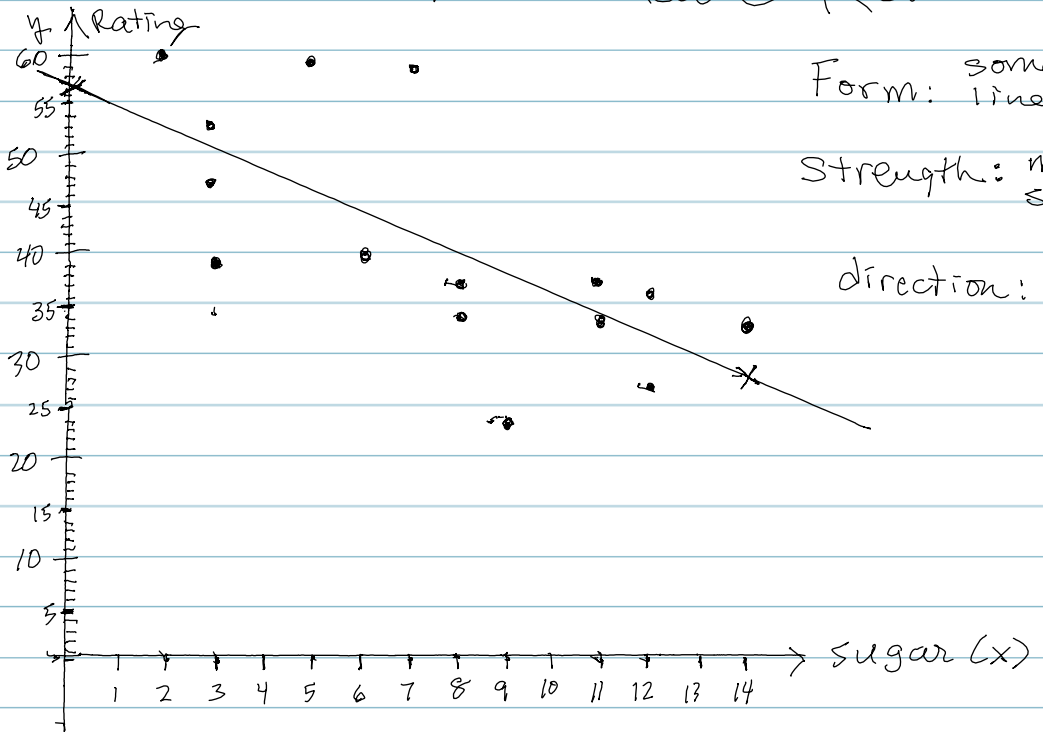
# Math 110 Final Exam Review

#7




(a) Form: somewhat linear

Strength: moderately strong

direction: negative (downhill)

(b) $r \approx -0.69$, Negative direction & moderate.

(c) moderate.

(d) $\bar{x} = 7.6$, $\bar{y} = 41.2$, $s_x = 3.87$, $s_y = 11.53$, $r = -0.69$

(e) $\text{slope} = \frac{r\, s_y}{s_x} = \frac{-0.69 \cdot 11.53}{3.87} \approx -2.08$ (strength → $r$, $s_y$, $s_x$)

(f) $y\text{int} = \bar{y} - \text{slope} \cdot \bar{x} = 41.2 - (-2.08) \cdot 7.6 \approx 57.0$

(g) $\hat{y} = \text{slope} \cdot x + y\text{int} \rightsquigarrow \hat{y} = -2.08x + 57.0$

(h) $x = 4 \rightsquigarrow \hat{y} = -2.08(4) + 57.0 \approx 48.68$

| x | y |
|---|---|
| 0 | 57 |
| 14 | 27.4 |

8. Coupons Used? (Yes / No)
9. Categorical (Yes / No)
10. A proportion is best for a categorical variable.
11. $\hat{p} = 616/800 = 0.770 = 77.0\% =$ sample proportion.
12. $p =$ population proportion
13. Not likely! Sampling variability & Error.