

$$\hat{y} = b_0 + b_1x$$

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

$$b_1 = r \frac{s_y}{s_x}$$

$$\hat{y} = 8 + 0.4x$$

$$\bar{x} = 5 \quad \bar{y} = 10$$

$$s_x = 2 \quad s_y = 1$$

$$r = 0.8$$

$$b_1 = 0.8 \frac{1}{2} = 0.4$$

$$b_0 = 10 - (0.4)(5)$$

$$b_0 = 8$$

$r$  = correlation coefficient - 0.85  
LINEAR  
Strength & direction

$R^2$  = % of variation in  $y$  that can  
be explained by the linear relationship  
with  $x$ .

*predicted response* (arrow pointing to  $y$ )  
*explanatory* (arrow pointing to  $x$ )

$$\log \hat{y} = 2.5 - 6x \quad x=5$$

$$\log \hat{y} = 2.5 - 6(5)$$

$$\log \hat{y} = 10^{-30}$$

$$\hat{y} = 10^{-30}$$

The image contains handwritten notes in blue and green ink. On the left is a graph of a square root function  $y = \sqrt{x}$  in the first quadrant. The y-axis is labeled  $\sqrt{y}$  and the x-axis is labeled  $x \sqrt{x}$ . A dotted line represents the curve. To the right of the graph are the following expressions:

- $\log x \text{ or } y$
- $\ln x \text{ or } y$
- $\sqrt{x \text{ or } y}$  (circled in green)
- $\frac{1}{x \text{ or } y}$

Further to the right, the number 239 is circled in green, with 5,6 written below it. An arrow points from the circled 239 down to the text "back of the book".

A] x data

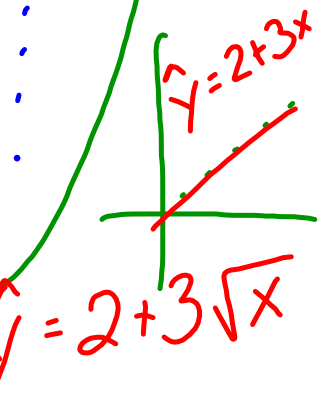
⋮  
⋮  
⋮

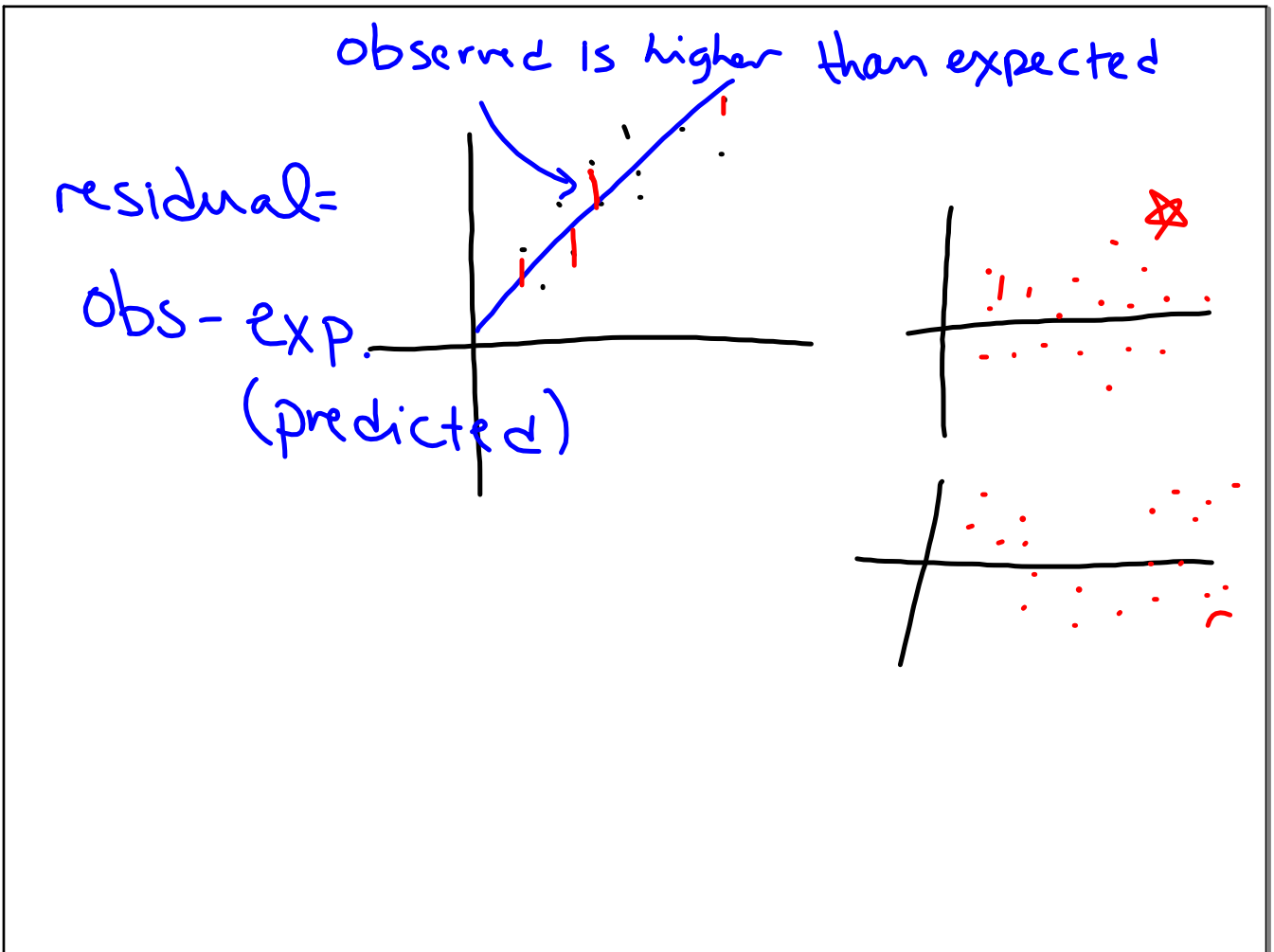
B] y data

⋮  
⋮  
⋮

C]  $\sqrt{x}$

$$= \sqrt{AC}$$





$r$  = correlation coefficient

no units

-1 to 1

Linear

↳ Quantitative  
Data

