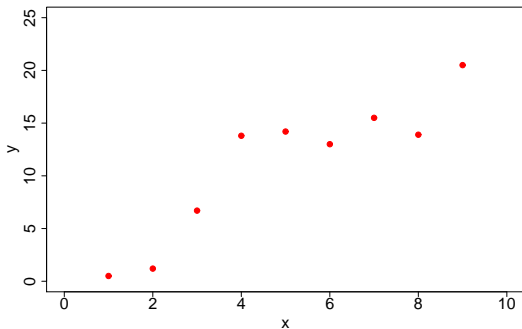


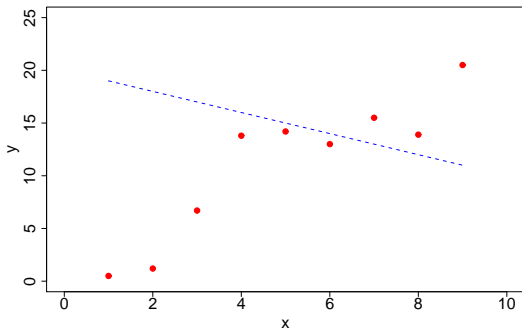
# Fitting a linear regression model



- **data are pairs of values  $x$  and  $y$  (input and output)**

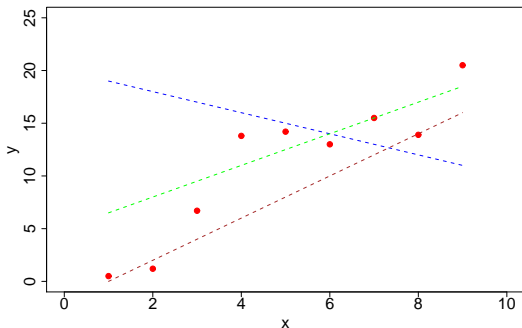
- 
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# Fitting a linear regression model

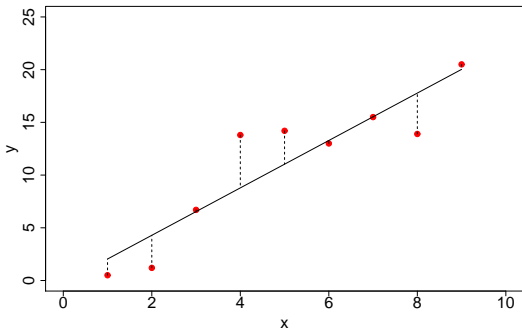


- data are pairs of values  $x$  and  $y$  (input and output)
- 
- the best-fitting line?

# Fitting a linear regression model



- data are pairs of values  $x$  and  $y$  (input and output)
- some lines are “obviously” better fits to the data than others, but which is the “best-fitting” line?



- data are pairs of values  $x$  and  $y$  (input and output)
- dashed vertical lines are **residuals**
- the best-fitting line makes the sum of squared residuals as small as possible