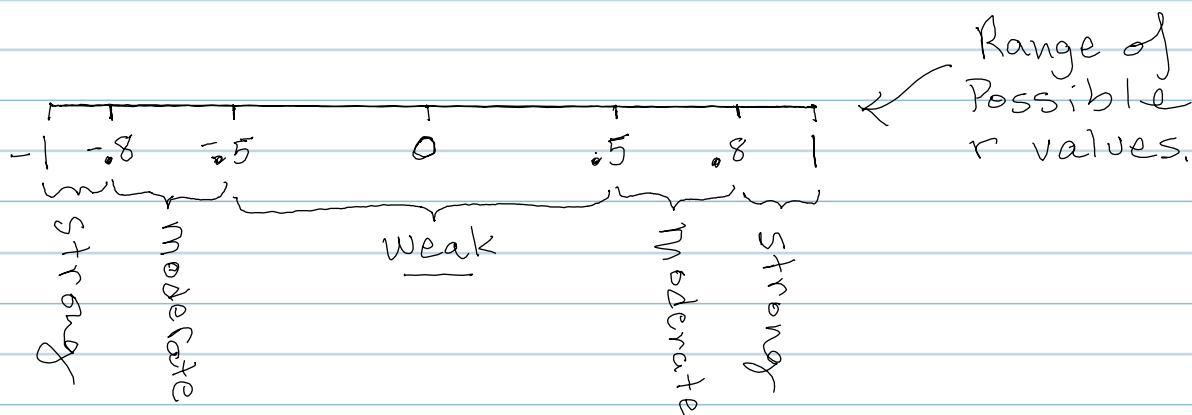


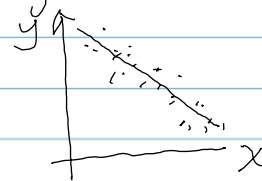
Linear  
Correlation

## Classifying Strength of Linear Relationships



Ex:  $x = \#$  of automatic weapons  
 $y =$  murder rate  
 $r = 0.885 \rightarrow .8 \leq r \leq 1$   
 $\Rightarrow$  A strong positive relationship exists between  $x$  &  $y$ .

Ex:  $x =$  Adult literacy rate of a country  
 $y =$  Infant mortality rate of the country.  
 $r \approx -0.864 \rightarrow -1 \leq r \leq -0.8$   
 $\Rightarrow$  A strong negative relationship exists between adult literacy & infant mortality.



Ex:  $x =$  hours of sleep for college students.  
 $y =$  shoe size of those students.  
 $r \approx -0.00511 \rightarrow -.5 < r < .5$   
 $\Rightarrow$  A very (if not non-existent) weak negative relationship exists between hours of sleep & shoe size.