

Math 4939 Jan 27, 2021

Let  $X$  be the grade on a mid-term and  
 $Y$  the grade on a final exam  
Suppose the correlation between  $X$  and  $Y$   
is 0.7

The mean and SD on both the mid-term  
and final exam are 75 and 10, respectively.

Suppose the relationship is linear.

- a) What is the predicted value of  $Y$  if  $X = 85$ ?
- b) What is the predicted value of  $Y$  if  $X = 65$ ?
- c) Does this mean that students who do well  
on the mid-term tend to get lazy and don't do as  
well, on average, on the final.  
and students who do poorly on the mid-term  
"buckle up" and work harder preparing for the final?  
Explain why or why not?