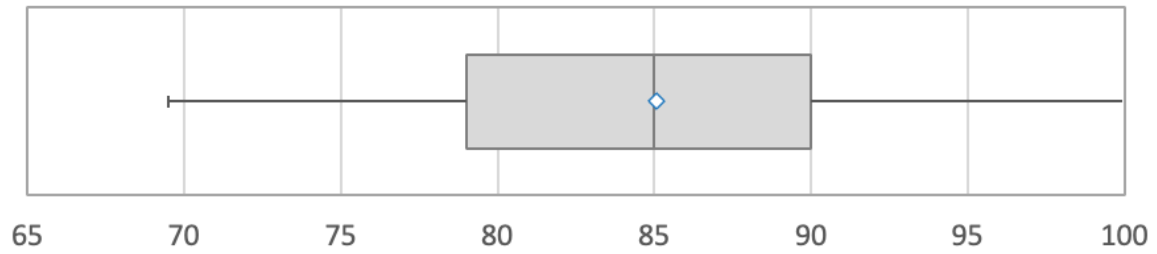


Warm Up

10/20

Write the equation of the line with a slope = $\frac{1}{3}$ and passes through the point $(12, 20)$.

TWMM Mid Unit Test - Total Results

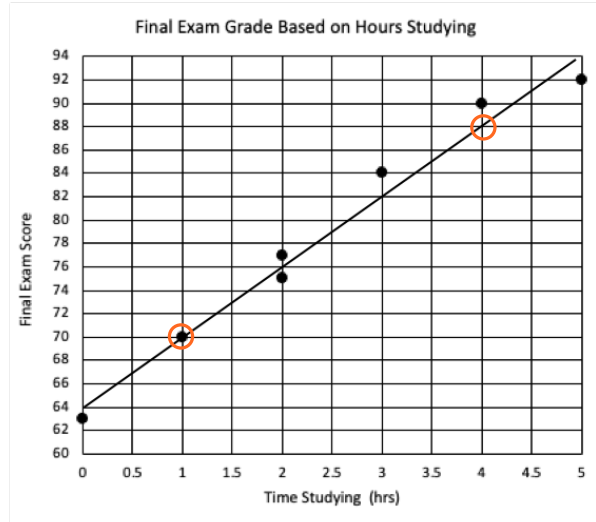


Homework Questions?

Exam Grade:

Graphed below are number of hours studied and the final exam grade earned.

A line of best fit is already drawn. Pick 2 points on the line, and write the equation for the line of best fit in slope-intercept form ($y = mx + b$).



What is the slope of your line? What does this number tell us about time spent studying and a final exam score?

The following questions can be answered using your equation.

1. Predict the exam grade of a student who studied for 6 hours.

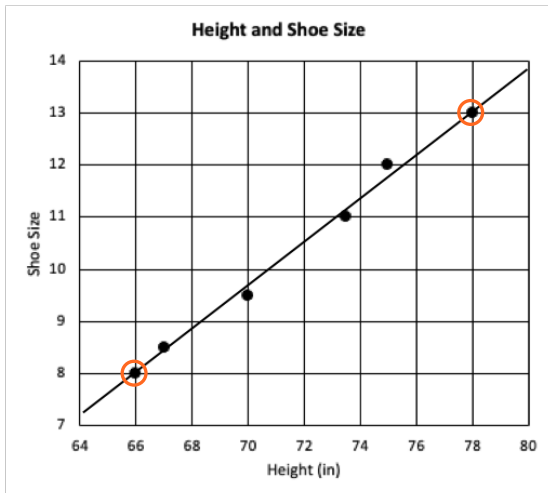


2. How many hours should a student study if they want to get an 80 on the test?

Height and Shoe Size:

The graph below shows the height and shoe sizes of six randomly selected men.

A line of best fit is already drawn. Pick 2 points on the line, and write the equation for the line of best fit in slope-intercept form ($y = mx + b$).



What is the slope of your line? What does this number tell us about a man's height and shoe size?

The following questions can be answered using your equation.

1. If a man has a shoe size of 9, what would be his predicted height?
2. If a man is 6 feet tall, what would we predict his shoe size to be?



4.1 Vitruvian Man

Relating Body Measurements

More than 2,000 years ago, a Roman architect and writer named Vitruvius found patterns by relating two body measurements. He claimed a person's arm span is equal to his or her height.

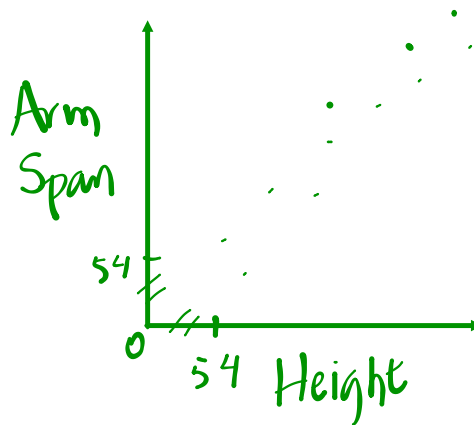
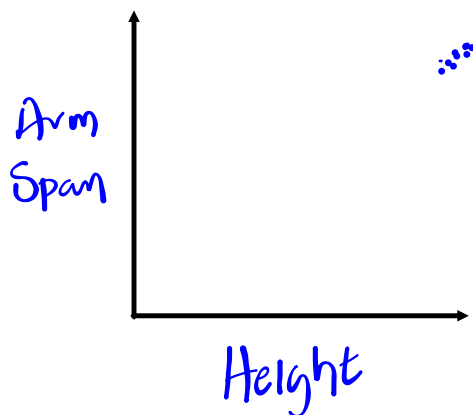


- Do you think the relationship between arm span and height applies to the students in your class?
- How would you display and analyze data collected to test the claim made by Vitruvius?

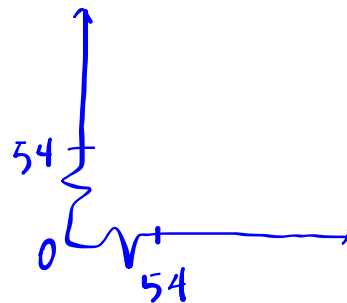
How do you graph if all your data is clumped far from the origin?

The table shows the height and arm span of students in a CMP class.

Height (in.)	56	57	57	58	59	60	60	60	62	64	64	66	67	67	67	68
Arm span (in.)	54	57	54	61	56	58	59	60	62	63	62	62	65	67	69	67



We want our data to fill the graph!



Another way to show a break in your axes.

Problem 4.1

Parts A, B and D

The table shows the height and arm span of students in a CMP class.

x	Height (in.)	56	57	57	58	59	60	60	60	62	64	64	66	67	67	67	68
y	Arm span (in.)	54	57	54	61	56	58	59	60	62	63	62	62	65	67	69	67



Do you think the data support the claim that arm span and height are about equal?



Analyze the data to test your ideas.

1. Plot the (height, arm span) data on a coordinate graph. The resulting graph is called a **scatter plot**.
2. Do you think the scatter plot supports the claim that arm span and height are about equal for most people?

continued on the next page >

Problem 4.1

continued

Parts A, B and D

3. If each student in the class had arm span s equal to height h , what equation would relate the two variables?

$$y = x$$

Points that could be on this line.

- Graph the equation on your scatter plot.
- Which data points (if any) does your line pass through? Explain how arm span and height are related in those points.
- Choose several data points that are not on your line. Explain how arm span and height are related in each case. How do you describe the relationship shown on the graph?

(56, 56)

(67, 67)

(62, 62)

- B** The tallest person in recorded history was Robert Pershing Wadlow. At age 22, he was 8 feet 11.1 inches (272 cm) tall. His arm span was 9 feet 5.75 inches (289 cm).

- Where would you plot the point (height, arm span) for Robert Wadlow? Would the point be *on*, *above*, or *below* the line you drew in Question A, part (3)?
- Does the data point for Robert Wadlow support the claim that arm span and height are roughly equal?

$$\text{Height: } 8'11.1" = 8(12) + 11.1 =$$

$$\text{Arm span: } 9'5.75" = 9(12) + 5.75 =$$

Problem 4.1

continued

Parts A, B and D

- D** The dinosaur *Tyrannosaurus rex* grew to 20 feet in height with an arm span of about 10 feet.
1. Do you think the *T. rex* data point fits the pattern that arm span and height are roughly equal? Explain.
 2. If you plot the data point, would it be *on*, *above*, or *below* the line you drew in Question A, part (3)?



Homework

Page 100, #'s 6a-d and 7a-b