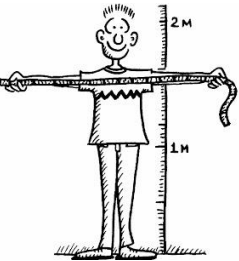


### Linear Regression Learning Task

**Directions:** Stretch your arms as wide as you can. Have someone measure the length, in centimeters rounded to the nearest millimeter, of your arm span from the tip of your fingers on one hand, across your back, to the tip of your fingers on your other hand. Have the person also measure your height, in centimeters rounded to the nearest millimeter. Place a ruler horizontally on the top of your head to indicate the location of your maximum height (as not to include the height of your hair.) Now, measure your height by having someone use a ruler from the top of your head to the floor vertically. Record this information in the appropriate rows in the table below. Switch places and measure the arm span and height of your partner. Record this information in the appropriate rows in the table below.

Gather at least 8 arm span and height data pairs from your surrounding classmates. Record this information in the appropriate rows in the table below.

	You	Partner	CM 1	CM 2	CM 3	CM 4	CM 5	CM 6	CM 7	CM 8
Height (inches)										
Arm Span (inches)										

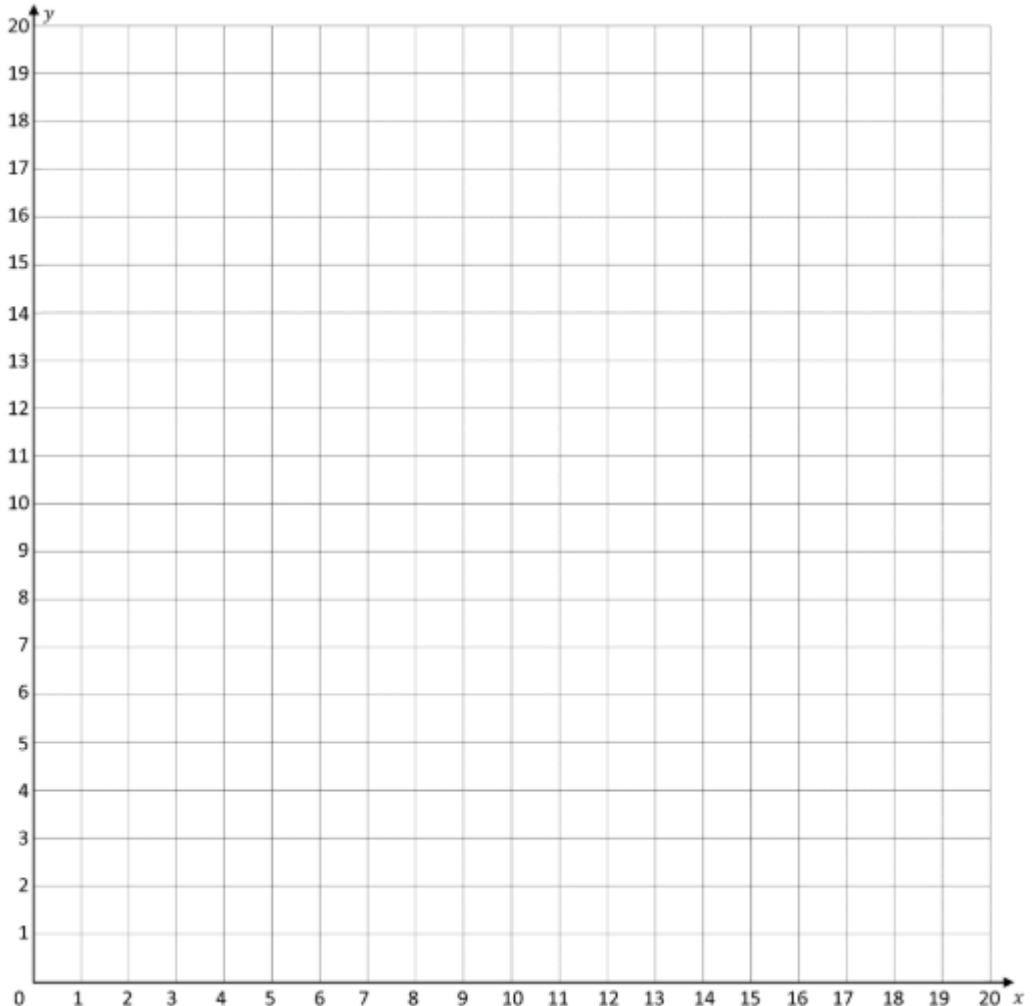


Key

1cm = 0.39 in

1 in = 2.54 cm

1 ft = 12 in



Name \_\_\_\_\_ Date \_\_\_\_\_ Per \_\_\_\_\_

## Linear Regression Learning Task

- 1.) Make a scatter plot of your data comparing height to arm span and create a line of best fit. Scale by 10's to make the data fit. Label your axes with height being the independent variable and arm span being the dependent variable.
  
- 2.) Use your calculator to find the linear regression equation in slope-intercept form.
  
  
  
  
  
  
  
  
  
  
- 3.) What is the correlation coefficient ( $r$ ), and what does this mean? Describe the correlation.
  
  
  
  
  
  
  
  
  
  
- 4.) Find the arm span of a person who is 140 cm. How tall in feet and inches is a person who is 140cm tall?
  
  
  
  
  
  
  
  
  
  
- 5.) Find the arm span of a person who is 250 cm. How tall in feet and inches is a person who is 250 cm tall? Is this a reasonable answer?
  
  
  
  
  
  
  
  
  
  
- 6.) How tall might a person be with an arm span of 100 cm?
  
  
  
  
  
  
  
  
  
  
- 7.) Shaquille O'Neal is 7'1". How many centimeters tall is he? And how many long would his arm span be in centimeters?