Name: _____ Hour: _____
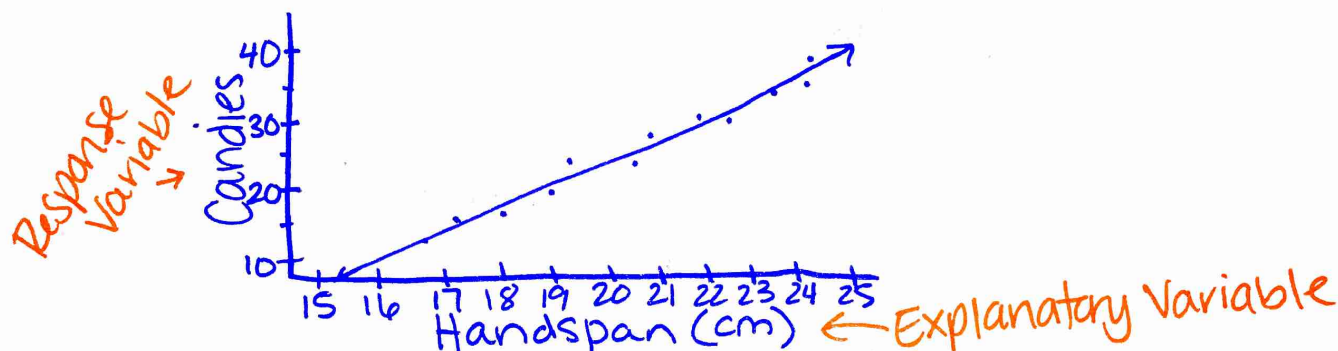
How much candy can you grab?

Can students with a larger handspan grab more candy than those with smaller handspans? Today we will investigate this question.

1. Measure the span of your dominant hand to the nearest half centimeter (cm). Handspan is the distance from the tip of the thumb to the tip of the pinkie finger on your fully stretched-out hand. Handspan = _____ cm

2. Use the same hand to grab as many candies as possible from the container. You must grab the candies with your fingers pointing down (no scooping!) and hold the candies for 2 seconds before counting them. After counting, put the candy back into the container. Record your data in the spreadsheet.

3. Use the applet at www.statsmedic.com/applets (2 Quantitative Variables) to make a scatterplot. Sketch below.

Response Variable → Candies (y-axis)
Explanatory Variable ← Handspan (cm) (x-axis: 15 16 17 18 19 20 21 22 23 24 25)

4. Describe the relationship displayed in the scatterplot.
   As handspan increases, the number of candies goes up.

5. Use the applet to find the line of best fit. Record it below.

   "predicted y" → $\hat{y} = -45 + 3.5x$ $\widehat{Candies} = -45 + 3.5(Handspan)$
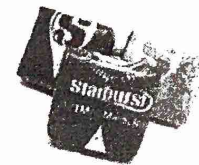
6. What is the slope of the line? Interpret the slope in context.
   3.5, With each additional cm of handspan, the *predicted* number of candies grabbed goes up by 3.5 candies.

7. What is the y-intercept of the line? Interpret the y-intercept in context.
   -45, If the handspan is 0cm, the number of candies grabbed is -45. This has no meaning in context.
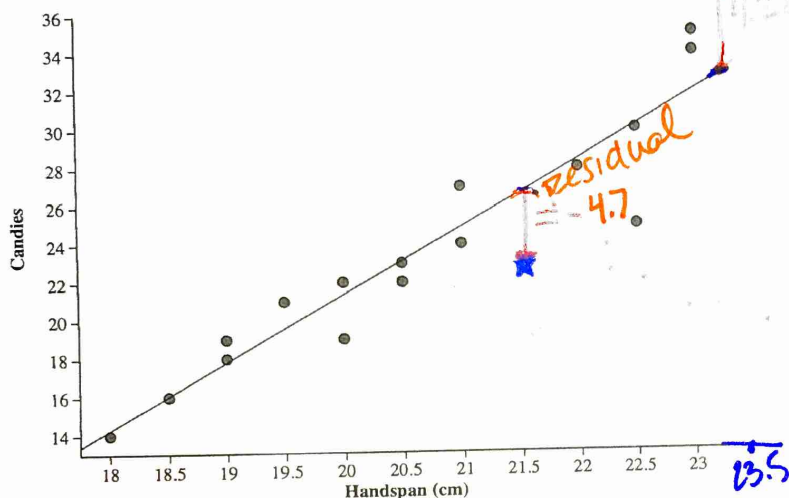
✚ STATS MEDIC

Name: _____ Hour: _____

How much candy can Lebron grab?

LeBron James has four NBA MVP Awards, three NBA Finals MVP Awards, and two Olympic Gold Medals. But how many candies can he grab?

1. One of the Algebra classes collected the following data:

Handspan (x)	18	18.5	19	19	19.5	20	20	20.5	20.5	21	21	22	22.5	22.5	23	23
Candies (y)	14	16	19	18	21	19	22	23	22	24	27	28	25	30	34	35

Residual

residual 4.7

2. Use the applet to find the line of best fit. Record it below.

$$\hat{y} = -49.41 + 3.54x$$

candies = -49.41 + 3.54(Handspan)

3. Lebron James has a handspan of 23.5 cm. Use the equation of the line to predict how many candies Lebron can grab. Show your work?

-49.41 + 3.54(23.5) = 33.78 candies

4. When Lebron visited East Kentwood High School in 2012, he attempted the candy grab and was able to grab 38 candies.

   a. Add this point to the scatterplot
   b. Was this value (higher) or lower than what you predicted?
   c. By how much? Show your work.

   38 - 33.78 = 4.22 candies

5. Your teacher will now measure their handspan. Handspan = 21.5

6. Predict how many candies your teacher can grab. Show your work.

   -49.41 + 3.54(21.5) = 26.7 candies

7. Your teacher will now attempt the candy grab. Number of candies = 22

8. Using the data for your teacher:

   a. Add this point to the scatterplot
   b. Was this value higher or (lower) than what you predicted?
   c. By how much? Show your work.   22 - 26.7 = -4.7

   26.7 - 22 = 4.7 candies

Residual = Actual - Predicted

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