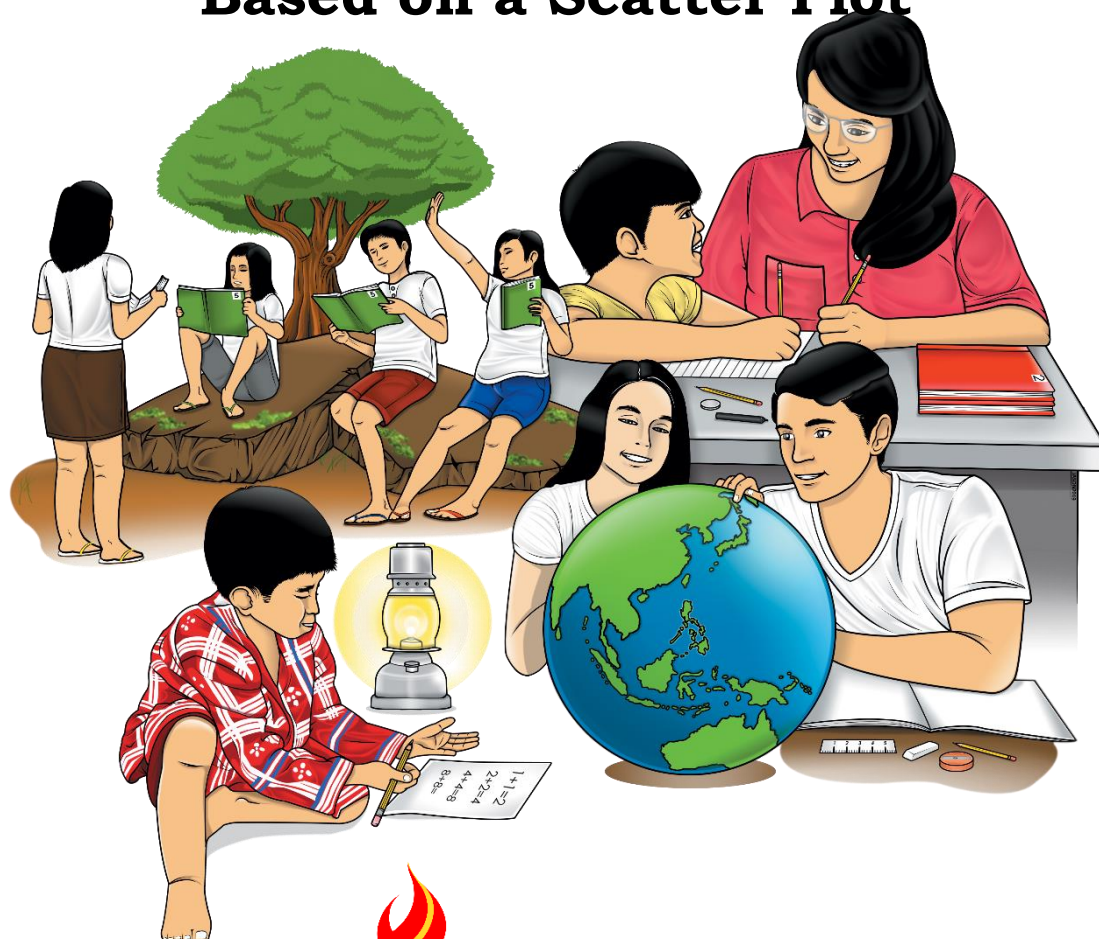


Statistics and Probability

Quarter 4 – Module 17:

Describing the Shape (Form), Trend (Direction), and Variation (Strength) Based on a Scatter Plot



Statistics and Probability – Grade 11

Alternative Delivery Mode

**Quarter 4 – Module 17: Describing the Shape (Form), Trend (Direction),
and Variation (Strength) Based on a Scatter Plot**

First Edition, 2021

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Statistics and Probability

Quarter 4 – Module 17: Describing the Shape (Form), Trend (Direction), and Variation (Strength) Based on a Scatter Plot

Introductory Message

This Self-Learning Module (SLM) is prepared so that you, our dear learners, can continue your studies and learn while at home. Activities, questions, directions, exercises, and discussions are carefully stated for you to understand each lesson.

Each SLM is composed of different parts. Each part shall guide you step-by-step as you discover and understand the lesson prepared for you.

Pre-tests are provided to measure your prior knowledge on lessons in each SLM. This will tell you if you need to proceed on completing this module or if you need to ask your facilitator or your teacher's assistance for better understanding of the lesson. At the end of each module, you need to answer the post-test to self-check your learning. Answer keys are provided for each activity and test. We trust that you will be honest in using these.

In addition to the material in the main text, Notes to the Teacher are also provided to our facilitators and parents for strategies and reminders on how they can best help you on your home-based learning.

Please use this module with care. Do not put unnecessary marks on any part of this SLM. Use a separate sheet of paper in answering the exercises and tests. And read the instructions carefully before performing each task.

If you have any questions in using this SLM or any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator.

Thank you.



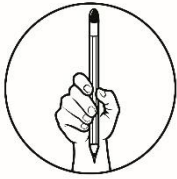
What I Need to Know

Using scatter plot, the relationship of the variables involved can be visualized. The scatter plot shows the **shape, trend, and variation of the variables involved**. In this ADM module, you will learn how to describe the relationship of variables of bivariate data in using the scatter plot.

After going through this module, you are expected to:

1. describe the relationship of variables in terms of shape (form) of the scatter plot;
2. describe the relationship of variables in terms of trend (direction) of the scatter plot; and
3. describe the relationship of variables in terms of variation (strength of association) based on the scatter plot.

Are you ready now to study bivariate data using your ADM module? Good luck and may you find it helpful.



What I Know

Choose the best answer to the given questions or statements. Write the letter of your choice on a separate sheet of paper.

1. If the points on the scatter graph follow a trend of rising from right to left, how will you describe the correlation of the variables involved?
 - a. moderate
 - b. negative
 - c. positive
 - d. zero

2. Joan noticed that the value of one variable corresponds to either low or high value of the second variable of a set of bivariate data.
What conclusion can you draw from the direction of correlation?
 - a. The variables have positive correlation.
 - b. The variables have negative correlation.
 - c. The variables have moderate correlation.
 - d. The variables have zero correlation or negligible correlation.

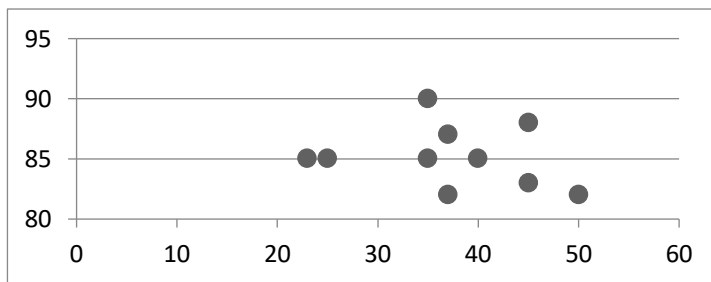
3. Shanks observed that the points on the scatter plot are close AROUND the trend line. What conclusion can he draw based on the scatter plot?
 - a. The variables have no correlation.
 - b. The variables have strong correlation.
 - c. The variables have perfect correlation.
 - d. The variables have moderate correlation

4. Zorro noticed that in constructing his scatter plot, the high values of one variable correspond to low values of the second variable. What conclusion can you draw from his data?
 - a. There is zero correlation between the variables.
 - b. There is a perfect correlation between the variables.
 - c. There is a positive correlation between the variables.
 - d. There is a negative correlation between the variables.

5. If the points on the scatter graph rise from left to right, then the variable involved has a _____ correlation.
 - a. moderate
 - b. negative
 - c. positive
 - d. zero

6. Joan noticed that the high value of one variable corresponds to low value of the second variable or low value of the first corresponds to high value of second variable. What conclusion can you draw from the direction of correlation?
- The variables have zero correlation.
 - The variables have positive correlation.
 - The variables have negative correlation.
 - The variables have moderate correlation.

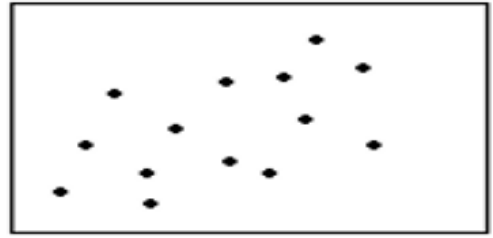
7. Given the scatter plot below, describe the variation of correlation of the variables involved.



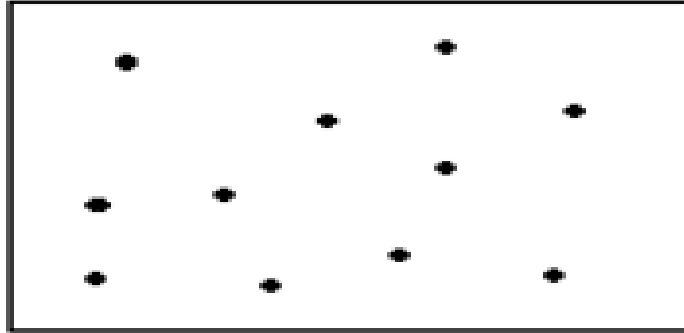
- The variables have strong correlation.
 - The variables have perfect correlation.
 - The variables have moderate correlation.
 - The variables have no correlation or negligible correlation.
8. Zorro noticed that there is a direct relationship between the variables he collected. What conclusion can you draw from his data?
- There is zero correlation between the variables.
 - There is a perfect correlation between the variables.
 - There is a positive correlation between the variables.
 - There is a negative correlation between the variables.
9. The strength of the correlation is associated with the _____ of the points to around the trend line on a scatter plot.
- closeness
 - direction
 - form
 - number
10. If the points on the scatter plot fall almost on the trend line, then the variables are said to have _____ correlation.
- negative
 - perfect
 - positive
 - strong
11. Noah noticed that the points on the scatter plot follow a trend of rising from right to left. He also noticed that the points are scattered moderately from the trend line. What is the correlation of the variables involved?
- moderate negative
 - strong negative
 - strong positive
 - weak negative

12. Estimate the strength of correlation of the scatter plot on the right

- a. strong negative
- b. strong positive
- c. weak negative
- d. weak positive



13. What conclusion can you draw from the scatter plot below?



- a. The variables have perfect correlation.
 - b. The variables are not related or associated.
 - c. The variables are moderately and negatively related.
 - d. The variables are strongly and positively related.
14. Complete the statement: "Variables have ____ positive correlation if the points fall closely to the trend line."
- a. negligible
 - b. moderate
 - c. strong
 - d. weak
15. Zorro noticed that in constructing his scatter plot, the points are scattered and do not follow any direction. What conclusion can be drawn on the situation?
- a. The variables have perfect correlation.
 - b. The variables are not related or associated.
 - c. The variables are moderately and negatively related.
 - d. The variables involved are strongly and positively related

Lesson**1****Form (Shape), Trend (Direction), and Variation (Strength) of Scatter Plot**

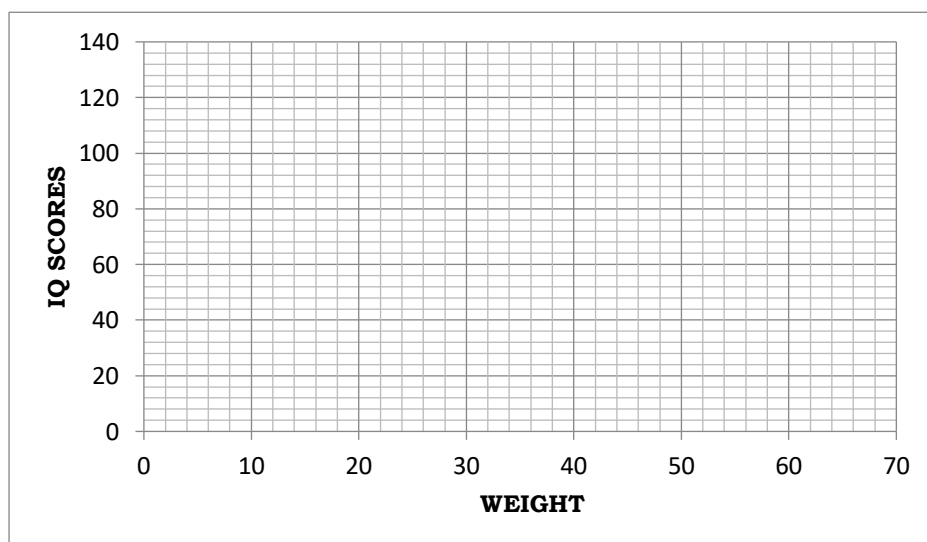
What do you think happens to the height of a person as he grows older? Does the person get taller as he ages or is there a certain period when he gets a bit shorter after he stopped growing taller? Likewise, will your monthly electric bills get higher if you continually increase your monthly electric consumption? To describe the relationship of these variables, one way is to graph its scatter plot and analyze the shape, trend, and variation of the scatter plot being formed.

***What's In*****Where am I Now?**

Create a scatter plot for each of the following situations.

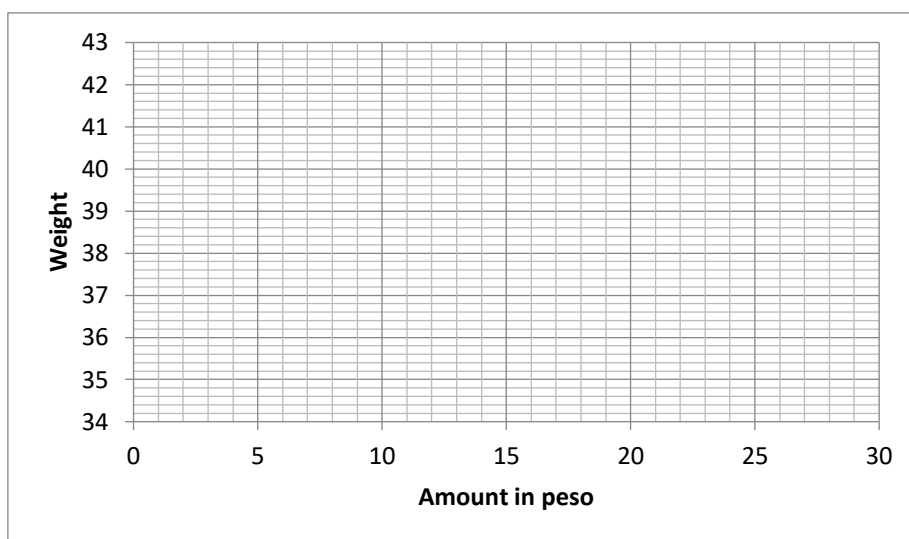
1. A researcher believes that nutrition of the learners has something to do with their IQ. That's why she conducted a research and recorded the IQ of the learners and their weight.

Weight in kg.	23	45	25	37	50	35	40	45	37	35
IQ scores	85	87	93	95	87	97	105	110	115	120



2. An ABM student interviewed 10 students regarding the amount they save from their allowance and their weight in kilogram. Data are shown on the table below.

Amount saved in peso	10	8	15	20	5	3	5	25	10	15
Weight in kg.	38	40	37	36	42	41	39	35	36	37



Notes to the Teacher

Check the student's level of readiness for the next topic. If s/he did not answer most of the items, you may provide another review activity about scatter plot.

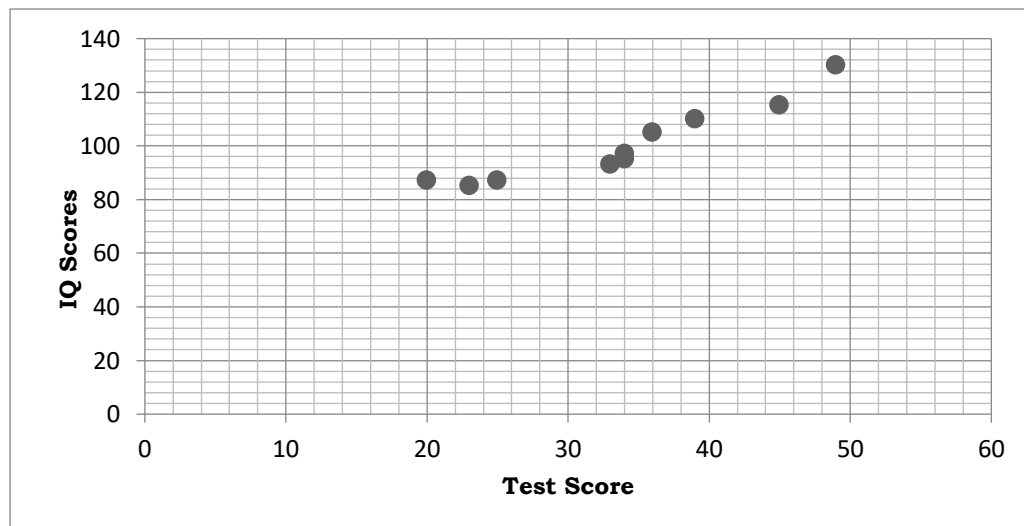


What's New

Activity 1. Study the scatter plot on each situation below and answer the guide questions.

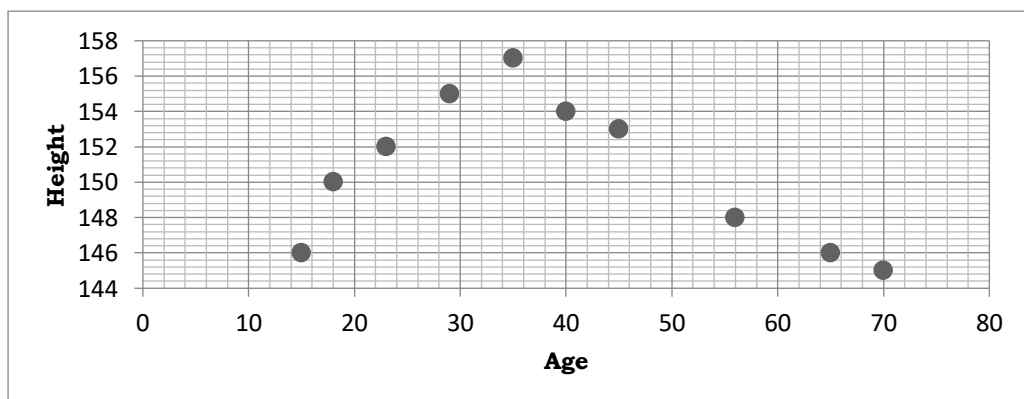
Situation 1: Teacher Koro recorded the IQ scores of his 10 students and their average scores in Mathematics. He also constructed a scatter plot of his collected data as shown below.

Test scores	23	20	33	34	25	34	36	39	45	49
IQ scores	85	87	93	95	87	97	105	110	115	130



Situation 2: Enrique plotted the age and height of 10 individuals in the graph below.

Age	15	18	23	29	35	40	45	56	65	70
Height	146	150	152	155	157	154	153	148	146	145



Guide Questions:

1. What is the difference between the scatter plots in Situation 1 and 2?

2. Which scatter plot has points that follow a trend of line?

3. Which scatter plot has points that follow a trend of a curve?

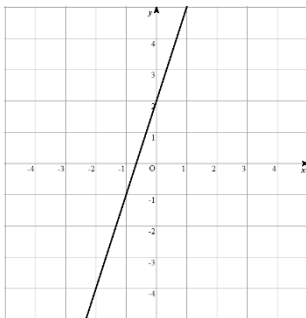
4. Based on the two situations, how are you going to describe the relationship of the variables based on the form or shape of the scatter plot?

The relationship of two variables is called correlation. If the variables have a linear correlation, it can be further described or explained depending on the form, direction, and strength of the points on the scatter plot.

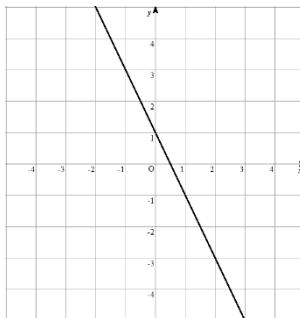
Do You Remember?

From a previous lesson in Mathematics, the concept of slope has already been discussed. Let's see how much you remember from your Grade 8 Algebra.

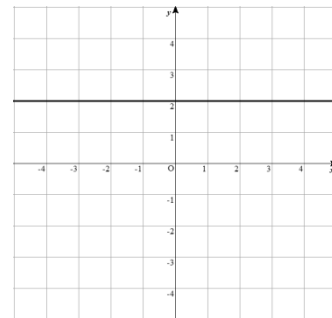
Positive Slope



Negative Slope



Zero Slope



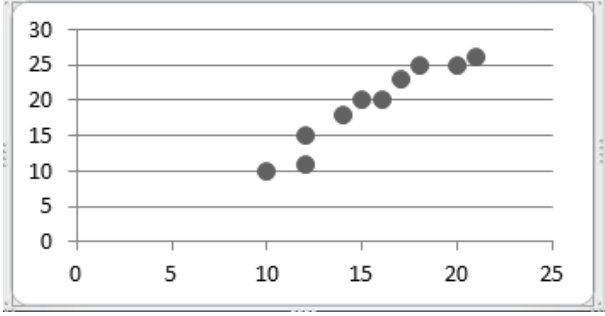
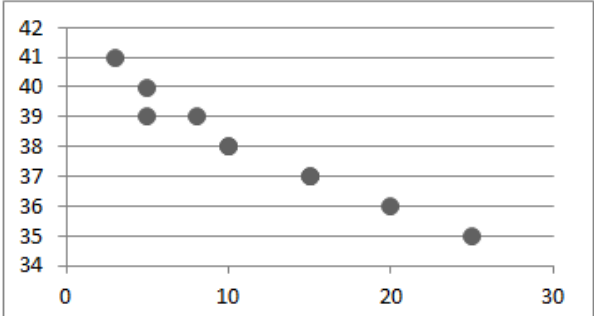
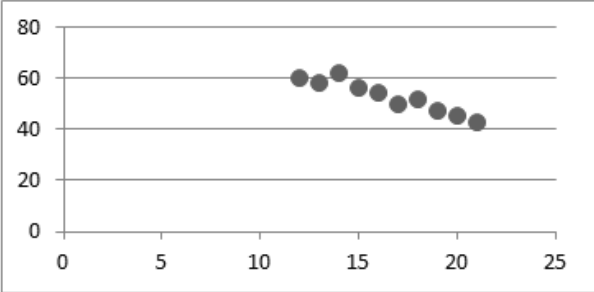
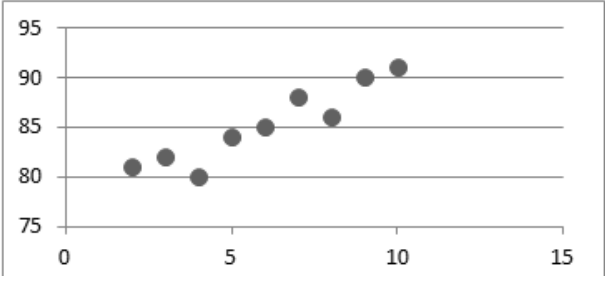
- 1.
- 2.

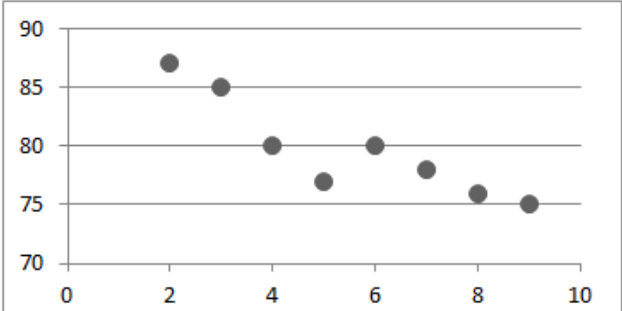
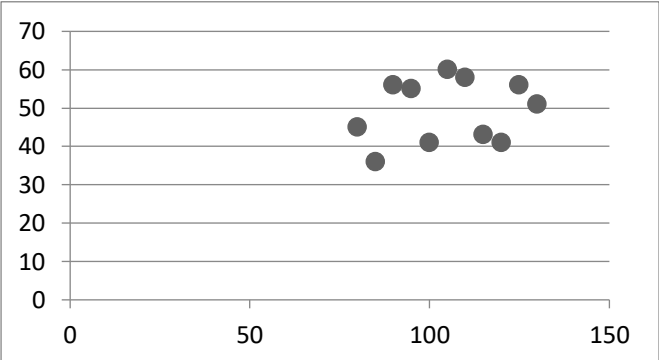
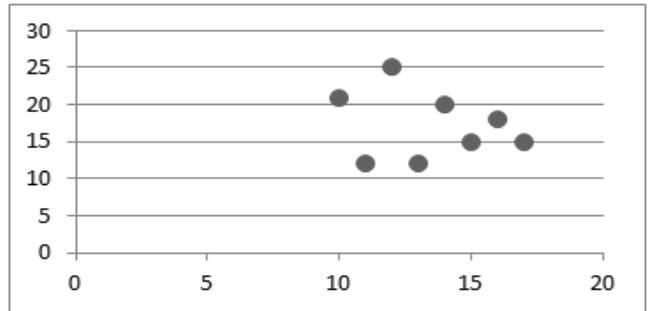
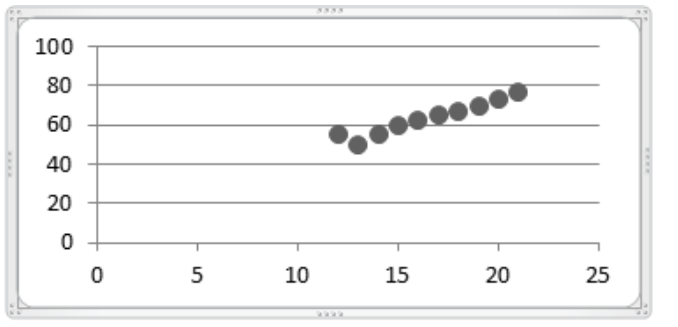
A line has a positive slope if the line rises from **left to right**. A line has a negative slope if the line rises from **right to left**. A line with a zero slope is parallel to **x-axis**.

Using the same concept, the variables have **positive correlation** if the points on the scatter plot follow a trend of **rising from left to right** portion of the graph. The variables have **negative correlation** if the points on the scatter plot follow a trend of **rising from right to left**. Finally, the variables have **no or negligible correlation** if the **points are scattered with no trend or direction of rise**.

Activity 2: Positive, Negative, or Zero?

Determine the trend of correlation based on the scatter plots presented in each item.

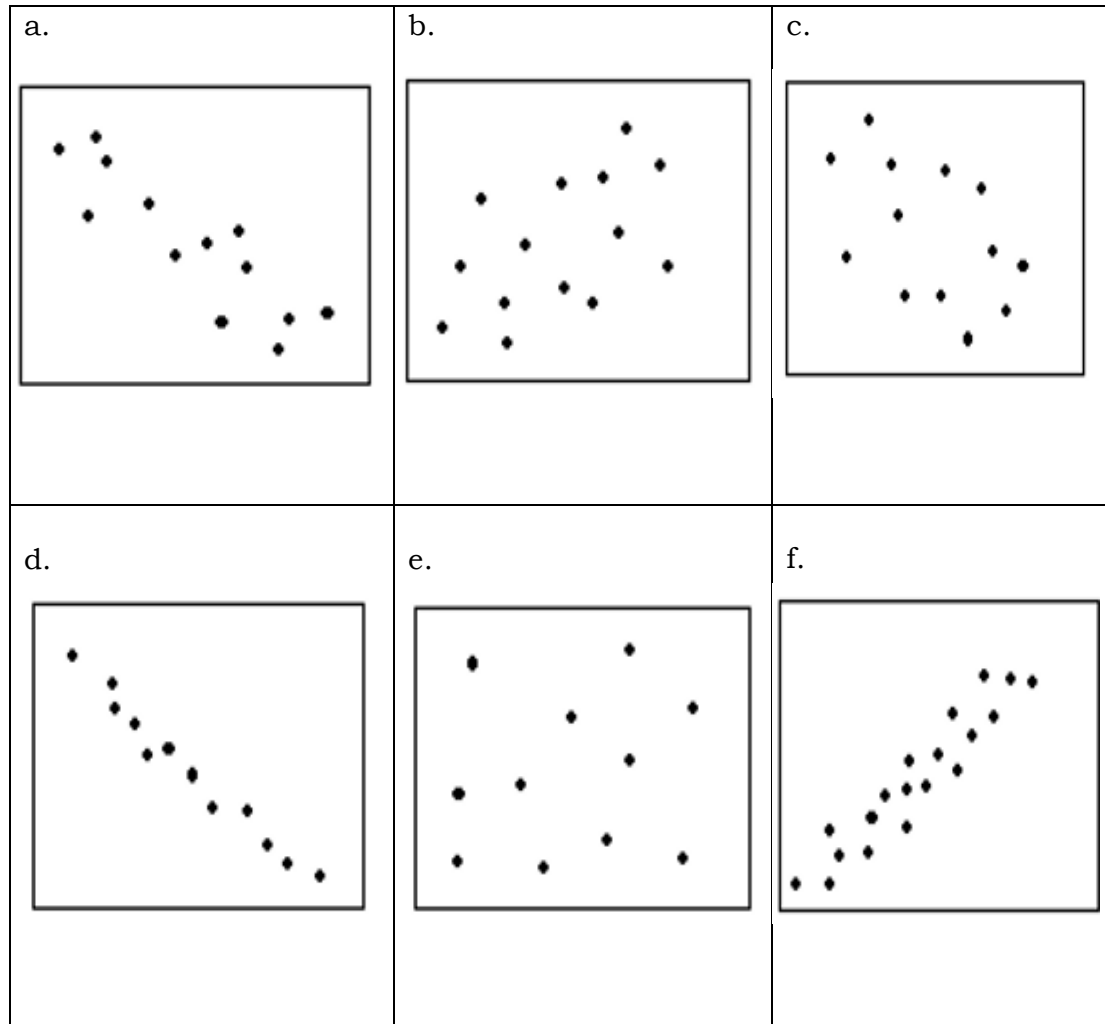
Scatter Plot	(Positive, Negative, or No/Negligible Correlation)
<p>1.</p> 	
<p>2.</p> 	
<p>3.</p> 	
<p>4.</p> 	

<p>5.</p> 	
<p>6.</p> 	
<p>7.</p> 	
<p>8.</p> 	

Aside from the form and trend of points on a scatter plot, the correlation of the variables can also be described by the closeness of the points on scatter plot. This is called the variation or simply the strength of correlation of the variables.

Activity 3: Stop, Look, and Observe!

Observe the closeness and the direction of the points on each scatter plot. Then, answer the questions that follow by writing the letter that corresponds to your answer.



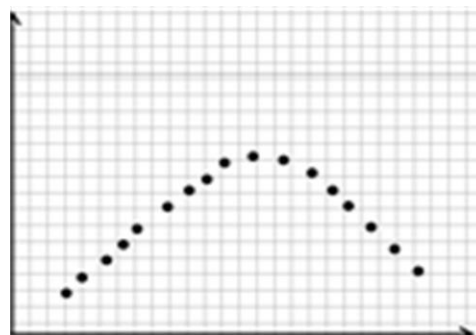
1. Which of the scatter plots above show/s positive correlation?	
A. scatter plot b only	C. scatter plots b and f
B. scatter plot f only	D. scatter plots b and e
2. Which of the graphs show/s negative correlation?	
A. scatter plot a only	C. scatter plots a and c only
B. scatter plot c only	D. scatter plots a, c, and d
3. Which scatter plot shows negative correlation with points almost falling to form a line?	
A. scatter plot b	C. scatter plot f
B. scatter plot g	D. scatter plot d
4. Which of the scatter plots shows a positive correlation with points widely spread apart?	
A. scatter plot a	C. scatter plot c
B. scatter plot b	D. scatter plot f

5. The scatter plot that shows no correlation or negligible correlation is _____. A. scatter plot a B. scatter plot c C. scatter plot e D. scatter plot f
6. Which of the scatter plots shows negative correlation with points close to one another? A. scatter plot c B. scatter plot d C. scatter plot f D. scatter plot e
7. Which of the scatter plots shows a negative correlation with points moderately dispersed? A. scatter plot a B. scatter plot b C. scatter plot c D. scatter plot d
8. The graph with positive correlation with points moderately spread apart is _____. A. scatter plot b B. scatter plot c C. scatter plot d D. scatter plot f
9. The graph that shows points following no direction and correlation is _____. A. scatter plot a B. scatter plot b C. scatter plot d D. scatter plot e

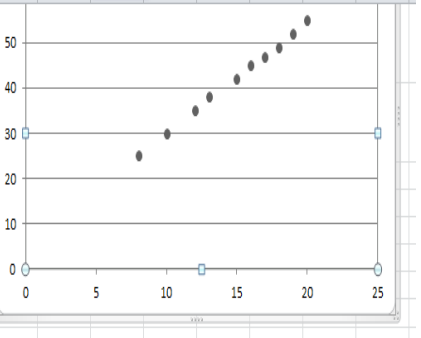
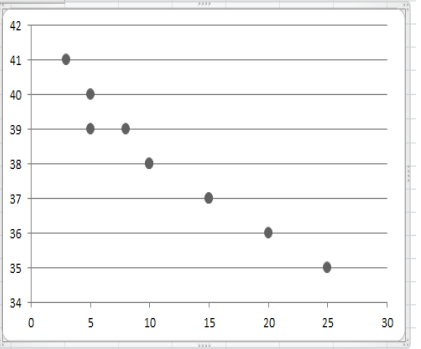
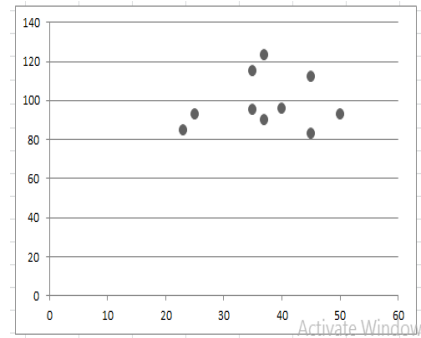


What is It

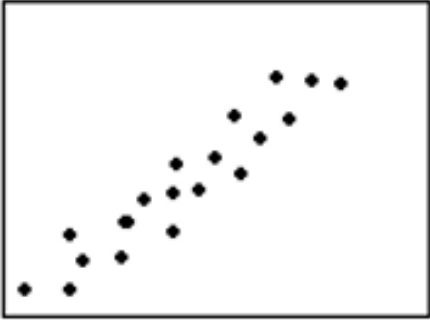

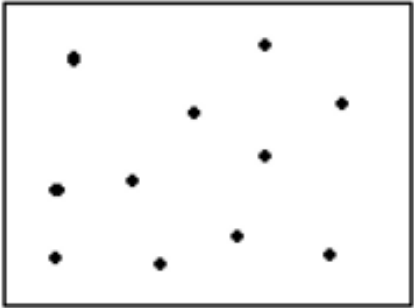
The correlation of the variables can be described in terms of **form (shape)**, **trend (direction)**, and **variation (strength)** of scatter plot. The form of correlation can be determined by the shape of points on a scatter plot categorized as **linear or curvilinear**. The form of correlation is linear if the points on scatter plot follow a **trend of straight line**. The form of scatter plot is non-linear if the points follow a **trend of curve line**. Sample scatter plots showing curvilinear form of correlation are given below.

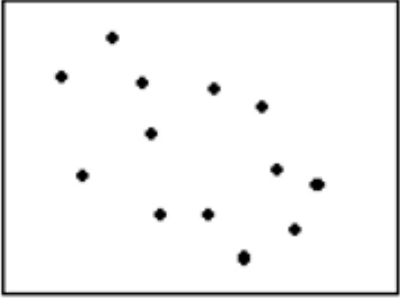




The correlation of variables can also be described in terms of its trend or direction. The trend of correlation can be positive, negative, or zero/negligible depending on the direction of the points. The trend of correlation is summarized in the table that follows.

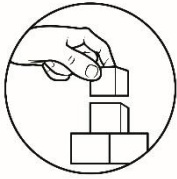
Trend	Graph	Direction of the Points	Description
Positive Correlation		The points follow a trend rising from left to right.	A positive correlation exists when high values of one variable correspond to high values of another variable or low values of one variable correspond to low values of another variable.
Negative Correlation		The points follow a trend rising from right to left.	A negative correlation exists when high values of one variable correspond to low values of another variable or low values of one variable correspond to high values of another variable.
No Correlation/ Negligible Correlation		The points are neither rising from left to right nor right to left.	A negligible correlation exists when high values of one variable correspond to either high or low values of another variable.

The closeness of the points around the trend line determines the variation or strength of the correlation between the variables involved. The closer the points to the trend line, the stronger the correlation of the variables is. The strength of correlation between two variables can be perfect, strong, weak, or no/negligible correlation. To summarize the strength of correlation, refer to the table below.

Correlation	Scatter Plot	Description
Strong Positive Correlation		This correlation exists when almost all of the points are on the line or the points are closely scattered on the trend line that rises from left to right.
Weak Positive		Compared to strong positive correlation, the points in this correlation are scattered a bit far from the trend line from left to right.
No Correlation or Negligible Correlation		The points in this correlation do not follow any trend line. The points are just scattered around the Cartesian plane.

Weak Negative Correlation		<p>The points in this correlation are scattered a bit far from the trend line from right to left.</p>
Moderate Negative Correlation		<p>This correlation exists when the points are moderately scattered rising from right to left.</p>
Strong Negative Correlation		<p>This correlation exists when almost all of the points are on the line or the points are closely scattered on the trend line that rises from right to left.</p>

Two variables can also have perfect positive or perfect negative correlation. In a scatter plot, the variables with perfect correlation will show points that fall into a straight line.



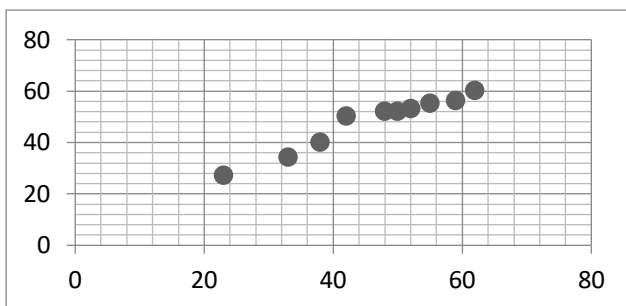
What's More

Activity 1.1: Forms of a Scatter Plot

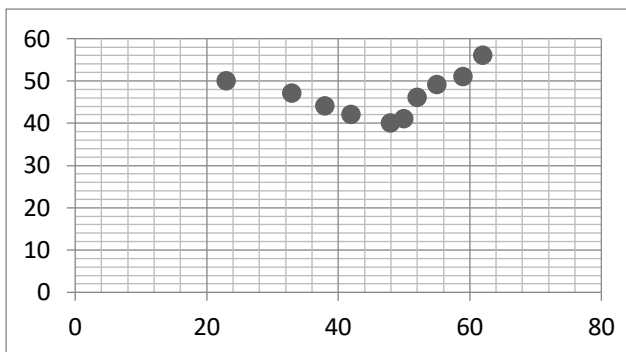
Determine whether the form of the given scatter plot is linear or curvilinear.

Scatter Plot	Trend																						
<p>1.</p> <table border="1"> <caption>Data points for Scatter Plot 1</caption> <thead> <tr> <th>X</th> <th>Y</th> </tr> </thead> <tbody> <tr><td>20</td><td>88</td></tr> <tr><td>25</td><td>85</td></tr> <tr><td>28</td><td>88</td></tr> <tr><td>32</td><td>92</td></tr> <tr><td>35</td><td>98</td></tr> <tr><td>38</td><td>105</td></tr> <tr><td>42</td><td>110</td></tr> <tr><td>48</td><td>115</td></tr> <tr><td>52</td><td>130</td></tr> </tbody> </table>	X	Y	20	88	25	85	28	88	32	92	35	98	38	105	42	110	48	115	52	130			
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5.



Activity 1.2: Trend of Correlation

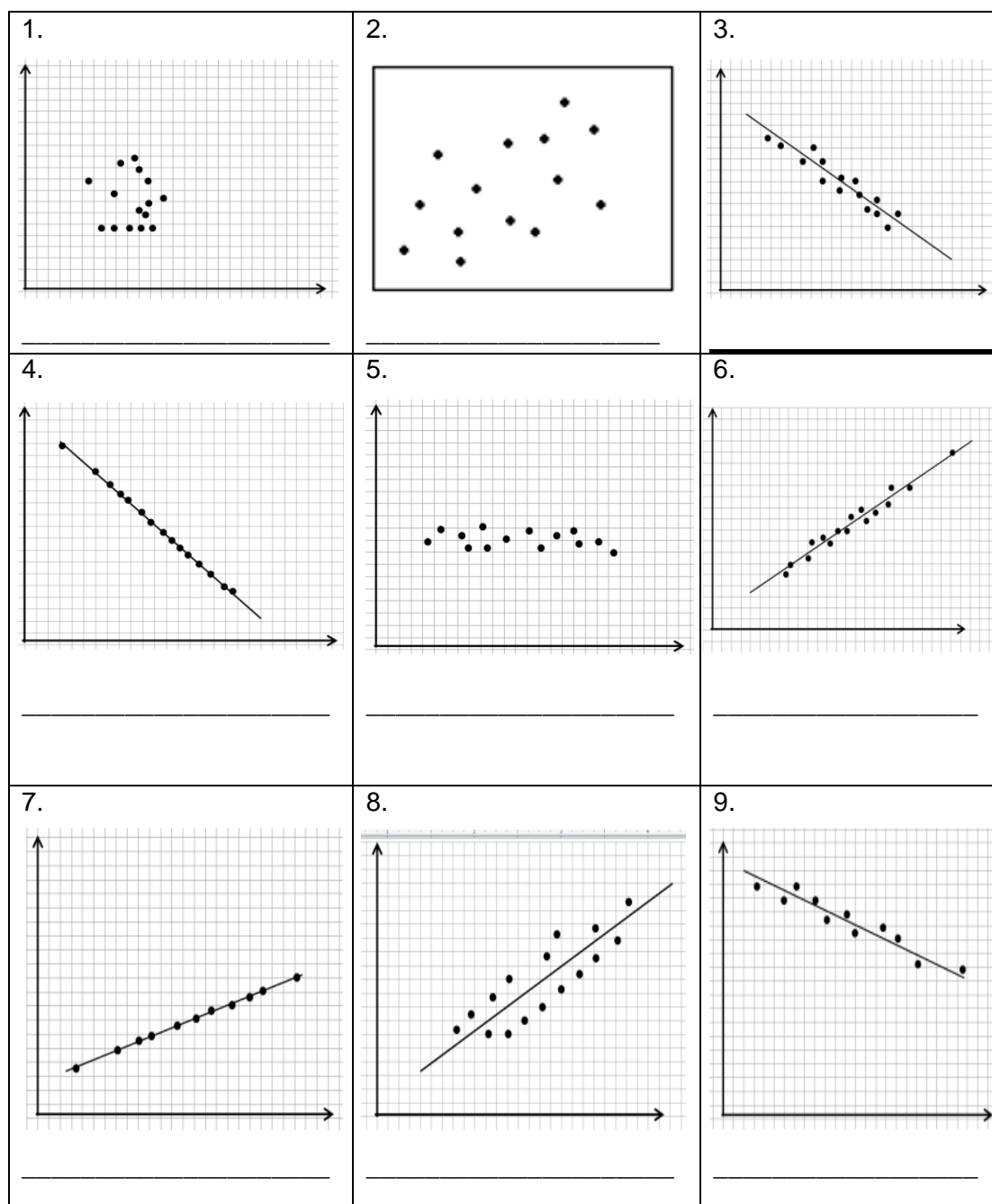
Examine the given variables below and determine the trend of correlation as to **positive, negative, or no/negligible correlation**.

Variable 1	Variable 2	Trend of Correlation
1. IQ scores	Test scores in an exam	
2. Age of a car	Price of the car	
3. Number of hours spent in studying	Height of students	
4. Number of students enrolled in a course	Number of teachers needed	
5. Number of workers hired to paint a building	Number of hours to finish the job	
6. Number of snakes in a farm	Number of rats in a farm	
7. Electric consumption	Monthly electric bill	
8. Height	Weight of a person	

of a person		
9. Speed of a car	Distance travelled	
10. Salary of an employee	Number of overtime rendered	

Activity 1.3: Let's Estimate!

Estimate the variation (strength) of correlation of the following scatter plots.



Activity 1.4: Matchy-Matchy!

Match the strength of correlation listed under Column A by choosing the letter that corresponds to its description under Column B. To decode the **Word of the Day** below, arrange the letters of your answers accordingly from 1-8.

COLUMN A	COLUMN B
____ 1. Weak Positive Correlation	R. points fall in the trend line that rises from right to left
____ 2. No Correlation	G. points are closely scattered around the trend line that rises from right to left
____ 3. Perfect Negative Correlation	T. points are scattered around the Cartesian plane
____ 4. Strong Positive Correlation	H. points fall far from the trend line that rises from right to left
____ 5. Perfect Positive Correlation	S. scattered a bit far from the trend line that rises from left to right
____ 6. Strong Negative Correlation	E. points are closely scattered to the trend line that rises from left to right
____ 7. No/Negligible Correlation	N. points fall in the trend line that rises from left to right
____ 8. Weak Negative Correlation	A. points fall out of the trend line that rises from left to right.

Word of the Day: _____



What I Have Learned

Complete the following statements. Write the answers in your notebook.

The correlation of variables can be determined by studying its scatter plot. The scatter plot can be described through its form, also known as ____ (1) _____. The form of scatter plot is either linear or ____ (2) _____.

In terms of ____ (3) _____ of correlation, it could be categorized as positive or negative correlation depending on the behavior of the points. The variables can also have no correlation.

The strength of correlation also known as ____ (4) _____ determines the closeness of the points in a line. If the points are plotted and they form a line, then there is ____ (5) _____ correlation.



What I Can Do

Identify pair of variables that fall under the following strengths and directions of correlation. Explain your answer.

Strength of Correlation	Variables involved
1. Strong Positive Correlation	
2. Moderate Positive Correlation	
3. Strong Negative Correlation	

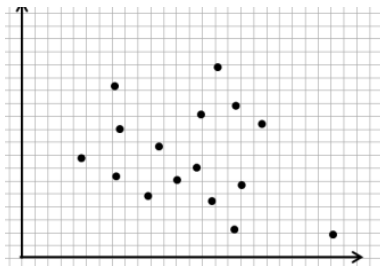


Assessment

Choose the best answer to the given questions or statements. Write the letter of your choice on a separate sheet of paper.

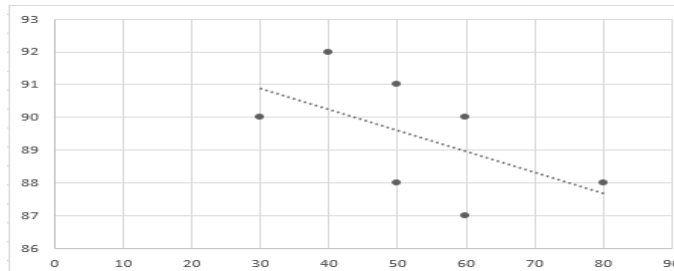
- If the points on the scatter graph rise from left to right, then the variables involved have a _____ correlation.
 - moderate
 - negligible
 - positive
 - zero

2. The strength of the correlation is associated with the _____ of the points to the trend on a scatter plot.
 - a. closeness
 - b. direction
 - c. form
 - d. number
3. Noah noticed that the points on a scatter plot follow a trend rising from right to left. He also noticed that the points are plotted closely around the trend line. What is the correlation of the variables involved?
 - a. strong negative
 - b. strong positive
 - c. weak negative
 - d. weak positive
4. What conclusion can you draw from the scatter plot below?

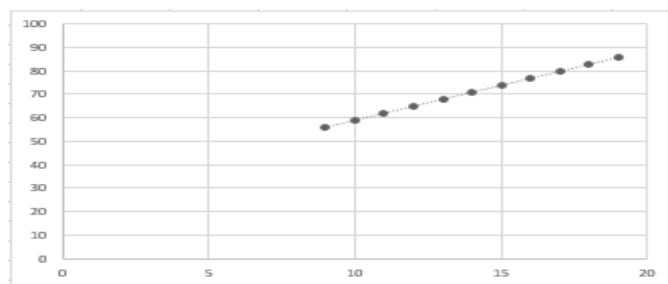


- a. The variables have perfect correlation.
 - b. The variables are not related or associated.
 - c. The variables are moderately and negatively related.
 - d. The variables are strongly and positively related.
5. If the points on the scatter plot fall almost in line, then the variables are said to have ____ correlation.
 - a. negative
 - b. perfect
 - c. positive
 - d. strong
6. Joan noticed that the high value of one variable corresponds to high value of the second variable or low value of the first corresponds to low value of second variable. What conclusion can you draw from the direction of correlation?
 - a. The variables have zero correlation.
 - b. The variables have positive correlation.
 - c. The variables have negative correlation.
 - d. The variables have moderate correlation.

7. Which of the statements best describes the scatter plot below?



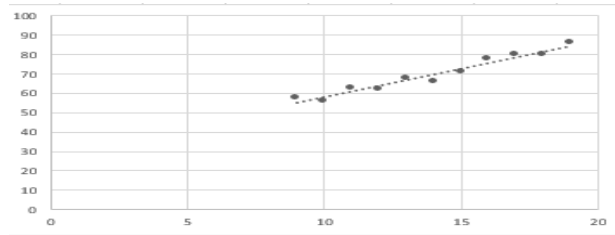
- The variables have weak and negative linear correlation.
 - The variables have weak and positive linear correlation.
 - The variables have strong and negative linear correlation.
 - The variables have strong and positive linear correlation.
8. Sanji noticed that there is an inverse relationship between the variables he collected. What conclusion can you draw from his data?
- There is zero correlation between the variables.
 - There is a perfect correlation between the variables.
 - There is a positive correlation between the variables.
 - There is a negative correlation between the variables.
9. What can you say about the relationship of the variables shown on the scatter plot below?



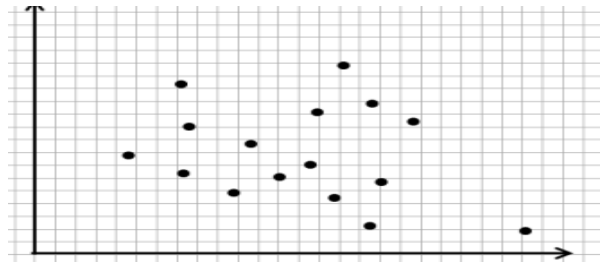
- The variables have a perfect negative correlation.
 - The variables have a perfect positive correlation.
 - The variables have a strong negative correlation.
 - The variables have a strong positive correlation.
10. If the points on the scatter plot fall almost on the trend line, rising from right to left, then the variables are said to have _____ correlation.
- perfect negative
 - strong negative
 - perfect positive
 - strong positive
11. Noelle noticed that the points on a scatter plot follow a trend of rising from left to right. He also noticed that the points are moderately scattered from the trend line. What is the correlation of the variables involved?
- strong negative correlation
 - strong positive correlation
 - weak negative correlation
 - weak positive correlation

12. Estimate the strength of correlation of the scatter plot on the right.

- a. strong negative
- b. strong positive
- c. weak negative
- d. weak positive



13. What conclusion can you draw from the scatter plot below?

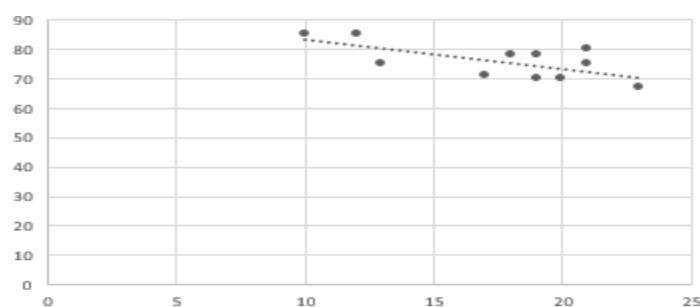


- a. The variables have perfect correlation.
- b. The variables are not related or associated.
- c. The variables are moderately and negatively related.
- d. The variables involved are strongly and positively related.

14. Complete the statement: “Variables have ____ and ____ correlation if the points rise from left to right falling closely to the trend line.”

- a. negative, perfect
- b. negative, strong
- c. positive, strong
- d. positive, perfect

15. Robin constructed a scatter plot based on the data he collected. What conclusion can he draw about the relationship of the variables based on the scatter plot?



- a. The variables have strong and negative correlation.
- b. The variables are moderately and negatively related.
- c. The variables involved are strongly and positively related.
- d. The variables are not related or associated with one another.

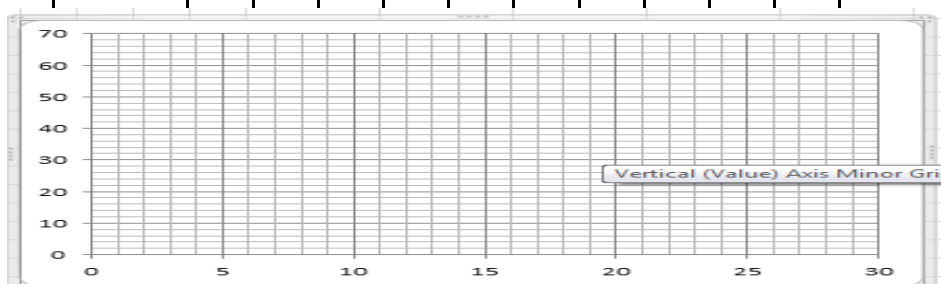


Additional Activities

Directions: Create a scatter plot based on the given data. Then, determine the form, trend, and variation of the scatter plot.

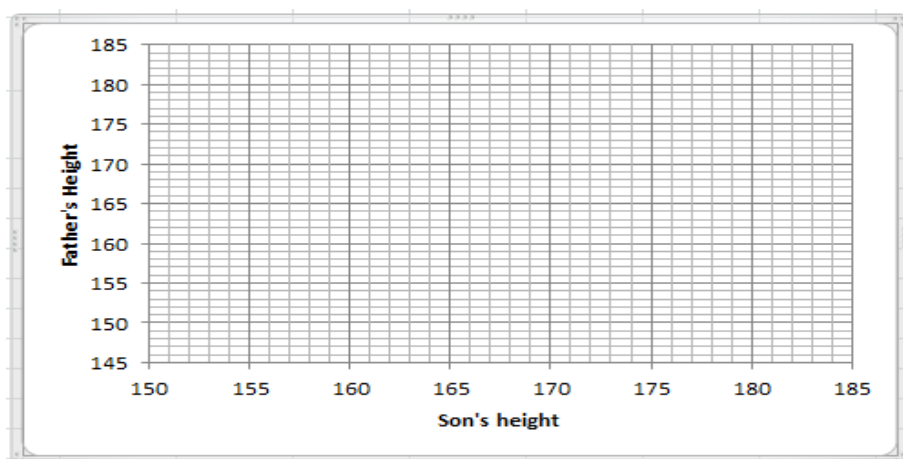
1.

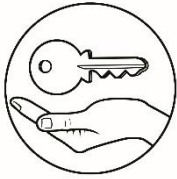
Age	12	14	15	16	18	19	20	23	24	25
Weight (in kg)	40	43	48	47	47	49	52	55	50	58



2.

Father's height (cm)	166	170	158	178	162	156	175	180	175	183
Son's height (cm)	160	162	150	165	157	156	170	175	172	180

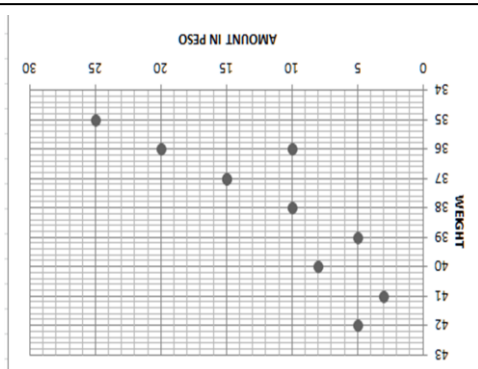




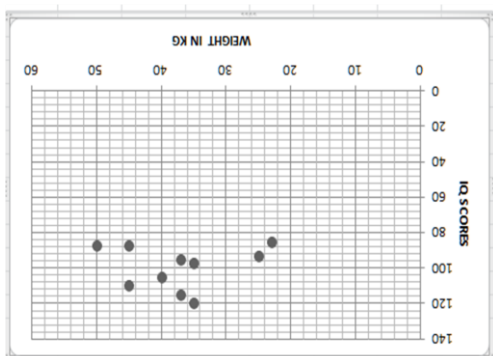
Answer Key

What I Know

1. B
2. A
3. B
4. D
5. C
6. C
7. A
8. C
9. A
10. D
11. A
12. D
13. B
14. C
15. B



2.



1.

What's In

Activity 3:

1. positive
2. negative
3. negative
4. positive
5. negative
6. no/negligible
7. no/negligible
8. positive

Activity 2:

1. Situation 1 has linear form based on scatter plot, while Situation 2 has curvilinear or non-linear form.
2. Situation 1
3. Situation 2
4. Linear form and non-linear form (curvilinear)

Activity 1:

What's New

The students' answers may vary.

What I Can Do

Assessment

- | | | |
|------|-------|-------|
| 1. C | 6. B | 11. C |
| 2. A | 7. A | 12. B |
| 3. A | 8. D | 13. B |
| 4. B | 9. B | 14. C |
| 5. D | 10. B | 15. A |

Activity 1.2

1. positive correlation
2. negative correlation
3. no/negligible correlation
4. positive correlation
5. negative correlation
6. negative correlation
7. positive correlation
8. no/negligible correlation
9. positive correlation
10. positive correlation

Activity 1.3

1. no/negligible correlation
2. weak positive correlation
3. strong negative correlation
4. perfect negative correlation
5. no correlation
6. strong positive correlation
7. perfect positive correlation
8. weak positive correlation
9. strong negative correlation

What I Have Learned

1. shape
2. non-linear/curvilinear
3. trend/direction
4. variation
5. perfect

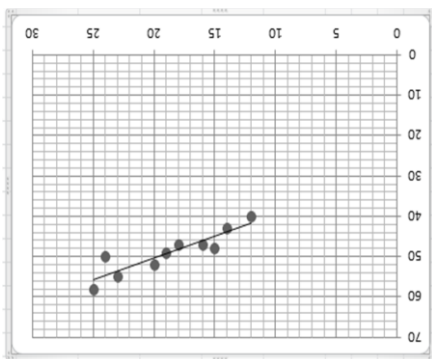
What's More

1. linear
2. linear
3. curvilinear
4. linear
5. curvilinear

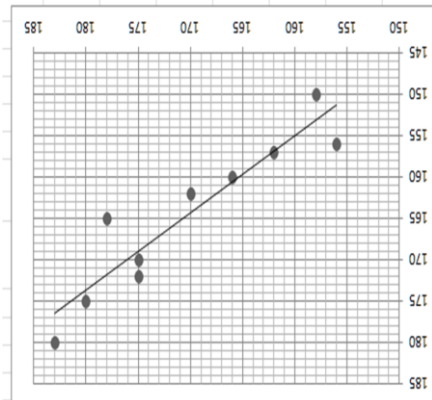
Activity 1.1

Additional Activity

1. Shape: Linear
Trend: Positive
Variation: Strong Positive
Correlation



2. Shape: Linear
Trend: Positive
Variation: Strong Positive
Correlation



Activity 1.4

1. S
 2. T
 3. R
 4. E
 5. N
 6. G
 7. T
 8. H
- Word of the Day:
- STRENGTH**

References

Books

- Albacea, Zita VJ., Mark John V. Ayaay, Isidoro P. David, and Imelda E. De Mesa. *Teaching Guide for Senior High School: Statistics and Probability*. Quezon City: Commision on Higher Education, 2016.
- Caraan, Avelino Jr S. *Introduction to Statistics & Probability: Modular Approach*. Mandaluyong City: Jose Rizal University Press, 2011.
- De Guzman, Danilo. *Statistics and Probability*. Quezon City: C & E Publishing Inc, 2017.
- Punzalan, Joyce Raymond B. *Senior High School Statistics and Probability*. Malaysia: Oxford Publishing, 2018.
- Sirug, Winston S. *Statistics and Probability for Senior High School CORE Subject A Comprehensive Approach K to 12 Curriculum Compliant*. Manila: Mindshapers Co., Inc., 2017.

Online Resources

- Lane, David M. "Online Statistics Education: A Multimedia Course of Study." Accessed May 25, 2020. <http://onlinestatbook.com/2/regression/intro.html>
- Quizizz. "Linear Regression | Algebra I Quiz" Accessed May 25, 2020. <https://quizizz.com/admin/quiz/5acae751c4daf70019c2369f/linear-regression>
- Rourke, Emily O. "Performance Based Learning and Assessment Task Tuition Cost Activity." Accessed May 25, 2020. [https://www.radford.edu/rumath-smpdc/Performance/src/Emily O'Rourke - Tuition Cost Activity.pdf](https://www.radford.edu/rumath-smpdc/Performance/src/Emily%20O'Rourke%20-%20Tuition%20Cost%20Activity.pdf)

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