

2011 MCAS Portfolio Appeal  
**WORK DESCRIPTION for High School Competency Portfolio in  
 MATHEMATICS**

(Attach one **WORK DESCRIPTION** to each piece in the portfolio.)

Student's Name: Student Name      Date work was produced: 5-27-11

**The Mathematics competency portfolio must include:**

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<input checked="" type="checkbox"/> Data Analysis, Statistics, and Probability	<input checked="" type="checkbox"/> 10.D.1	<input type="checkbox"/> 10.D.2			

**ON THE ATTACHED PIECE:**

What score did the student receive? (Level of Accuracy = 100 %)

How much was done independently by the student? (Level of Independence = 80 %)

What type and how much assistance, coaching, and prompting did the student receive on the attached piece?

REVIEW OF A STEM-LEAF PLOT; USE OF A CALCULATOR

What was the student asked to do in order to complete the attached piece (i.e., what was the assignment)?

DISPLAY BOWLING SCORES ON A STEM-LEAF PLOT; FIND THE MEAN, MEDIAN, AND RANGE FOR THE SCORES

Self-evaluation (optional) - continue on back, if needed: ON EVIDENCE

# Stem and Leaf Plots

10. D. 1

Name Student Name

Date 5/27/11

The Following is a List of George's bowling Scores Last month:

92, 93, 99, 106, 89, 99, 109, 120, 101, 104, 99, 116

## Part I

Display these Scores in a stem and Leaf plot. Include an appropriate title and a Key.

George's bowling scores

8	9
9	2 3 9 9 9
10	1 4 6 9
11	6
12	0

Key: 8|9 = 89.

## Part II

Use the information in the Stem and Leaf Plot above to answer the following:

- A. What is the Mean bowling score?  $\frac{1227}{2} = 102.25$
- B. What is the Median bowling Score?  $\frac{99+101}{2} = \frac{200}{2} = 100$
- C. What is the highest and lowest score? High = 120  
Low = 89
- D. What is the range of these scores? Range =  $120 - 89 = 31$ .

Student comments:

EASY.

$$A) \text{ MEAN: } \frac{89+92+93+99+99+99+101+104+106+109+116+120}{12} = \frac{1227}{12} = 102.25$$

$$B) \text{ Median: } 89, 92, 93, 99, 99, 99, 101, 104, 106, 109, 116, 120$$

$$\frac{99+101}{2} = \frac{200}{2} = 100$$

$$C) \text{ High} = 120$$

$$\text{Low} = 89$$

$$D) \text{ Range} = 120 - 89 = 31$$

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What type and how much assistance, coaching, and prompting did the student receive on the attached piece?  
USE OF A CALCULATOR

What was the student asked to do in order to complete the attached piece (i.e., what was the assignment)?  
DETERMINE THE MEAN, MEDIAN, AND MODE FROM A GIVEN TABLE OF VALUES

Self-evaluation (optional) - continue on back, if needed: ON EVIDENCE

Student's Name \_\_\_\_\_ Student Name \_\_\_\_\_

Date

5/27/2011

Learning Standard: 10.D.1

Attendance at Home  
Football Games

Game	Attendance
1	287
2	268
3	283
4	270
5	70
6	283
7	275

A) 70, 268, 270, 275, 283, 283, 287  
Range =  $287 - 70 = 217$ .

- a. What is the **range** of the attendance at the 7 games. Show or explain how you got your answer.
- b. Determine each of the following measures of the attendance. Show or explain how you got each answer.
- Mean
  - Median
  - Mode

Student Comment:

It is easy I understand.

$$B) \text{ Mean} = 70 + 268 + 270 + 275 + 283 + 283 + 287 = \frac{1736}{7} = 248$$
$$\text{Median} = 70, 268, 270, 275, 283, 283, 287.$$

275

Mode = 283 because it appears the most time.

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HOW TO DISPLAY DATA ON A BOX-AND WHISKER WITH A NUMBER LINE

What was the student asked to do in order to complete the attached piece (i.e., what was the assignment)?

ANSWER QUESTIONS PERTAINING TO A GIVEN BOX-AND-WHISKER; CONSTRUCT A BOX AND WHISKER FROM A GIVEN SET OF DATA

Self-evaluation (optional) - continue on back, if needed: ON EVIDENCE

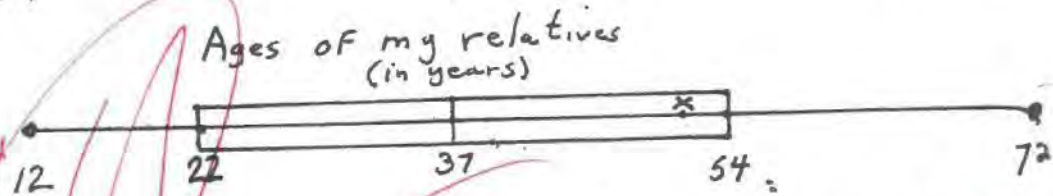
# Box and Whiskers

10.D.1

Name: Student Name

Date: 5/31/2011

## Part I



1. What is their median age?  
(be sure to label your answer) median age = 37 ✓
2. What is the age of my youngest relative? youngest = 12 ✓
3. What is the age of the oldest? oldest = 72 ✓
4. What is the range of the ages of my relatives? 72 - 12 = 60 ✓
5. Can you find the mode age of my relatives from the box + whisker above? yes   
no   
IF yes, what is it? \_\_\_\_\_  
IF no, why not? because I can not tell what age occurs most often
6. Locate the X in the box + whisker above. What quartile is it in? third quartile

## \* Part II

Make a box + whisker to show the following test results in your math class:  
(Draw it above the number line below!)

40, 80, 72, 50, 98, 88, 32, 86, 86, 82

X ON FOLLOWING SHEET



Student comments: EASY.

32, 40, 50, 72, 80, 82, 86, 86, 88, 98

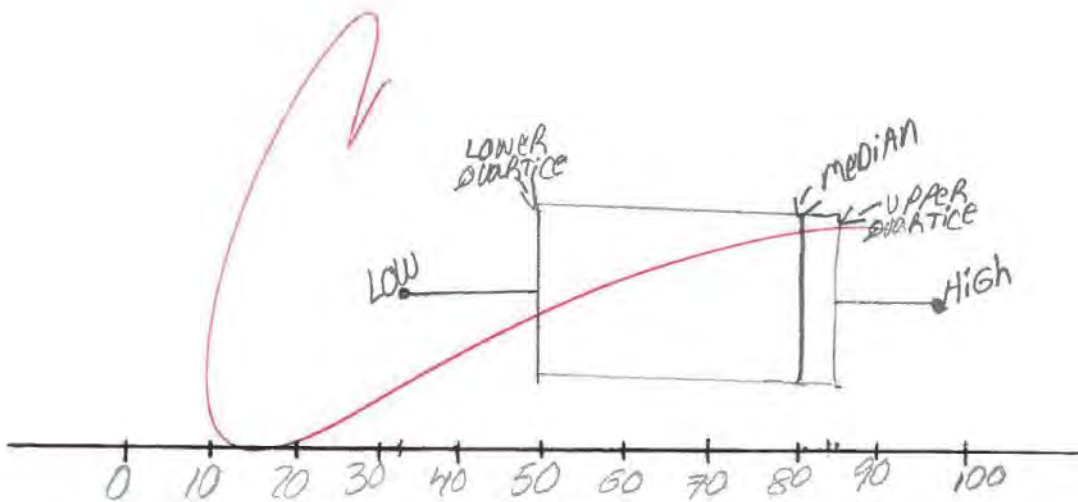
Student Name  
5/3/2011

32 Low ✓  
98 High ✓

$$\text{Median} = \frac{80 + 82}{2} = \frac{162}{2} = 81 \checkmark$$

Lower quartile  
32, 40, 50, 72, 80 ✓

Upper quartile  
82, 86, 86, 88, 98 ✓



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NONE

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CONSTRUCT A LINE PLOT FOR A GIVEN SET OF DATA AND ANSWER QUESTION / FOR A GIVEN LINE PLOT

Self-evaluation (optional) - continue on back, if needed: ON EVIDENCE

5/31/2011

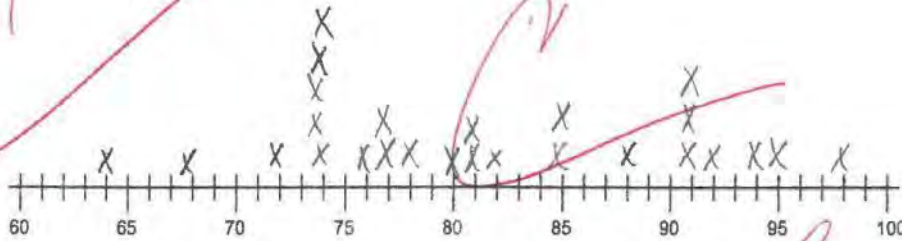
**Practice Problems**

Name Savilys Guerrero

1) Twenty-six math grades are listed below. [10.D.1]

77, 91, 88, 72, 82, 74, 68, 92, 85, 74, 77, 98, 64,  
74, 91, 95, 74, 91, 85, 80, 94, 81, 76, 81, 78, 74

a) Make a line plot of the grades.



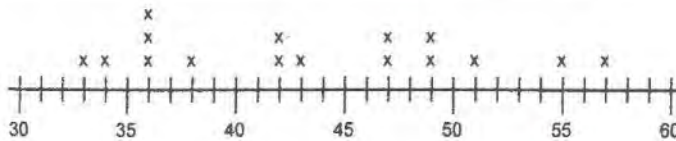
b) What is the range of the list of grades?

$64 - 98$  Range =  $98 - 64 = 34$

c) What grade appears on the line plot more than any of the others?

74 is The Mode

2) A list of values is represented on the line plot below. [10.D.1]



a) Make a list of all of the numbers represented on the above line plot.

33, 34, 36, 36, 36, 38, 42, 42, 43, 47, 47, 49, 49,  
55, 57.

b) What is the lowest value on the line plot? What is the greatest value?

33 is the lowest in the 57 is the High ~~lowest~~?

STUDENT COMMENT: VERY EASY.

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What was the student asked to do in order to complete the attached piece (i.e., what was the assignment)?  
DETERMINE IF THE MODE, MEAN, MEDIAN, AND RANGE CHANGE IF THERE IS AN OMISSION IN ORIGINAL DATA SET

---

Self-evaluation (optional) - continue on back, if needed: ON EVIDENCE

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Student's Name \_\_\_\_\_ Student Name \_\_\_\_\_ Date 5/3/2011

Learning Standard: 10.D.1

The heights of the members of a basketball team are listed in the table below.

Heights of Team Members

Name	Height (inches)
Schwartz	71
Crowe	68
Gomez	78
Burke	73
Roberts	77
Jackson	75
O'Connor	80
Arroyo	75
Vien	68
Edwards	75

If Crowe leaves the team, what effect, if any, will his leaving have on the mean, median, mode, and range?

Student Comment: \_\_\_\_\_

EASY.

~~68, 68, 71, 73, 75, 75, 75, 77, 78, 80.~~

$$\frac{75+75}{2} = \frac{150}{2} = 75 \text{ Median.}$$

75 is the mode.

$$80 - 68 = 12 \text{ Range.}$$

$$\text{Mean} = \frac{68 + 68 + 71 + 73 + 75 + 75 + 75 + 77 + 78 + 80}{10} = \frac{740}{10} = \boxed{74}.$$

Data with crume leaves the team

~~68, 71, 73, 75, 75, 75, 77, 78, 80.~~

Median is 75

Mode is 75

Range is  $80 - 68 = 12$

$$\text{Mean} = \frac{740 - 68}{9} = \frac{672}{9} = 74.6$$

The mean change a little when crume leaves the team.

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What type and how much assistance, coaching, and prompting did the student receive on the attached piece?  
CALCULATOR; BRIEF REVIEW OF CIRCLE GRAPH

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What was the student asked to do in order to complete the attached piece (i.e., what was the assignment)?  
FIND CENTRAL ANGLES FOR A CIRCLE GRAPH; DETERMINE EXPENDITURES DISPLAYED ON A CIRCLE GRAPH

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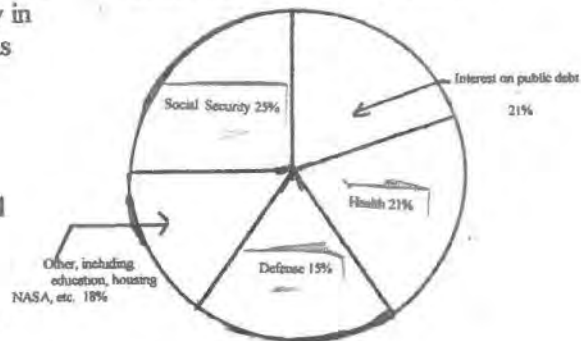
Student's Name Student Name

Date 5/31/2011

Learning Standard 10.D.1

The graph at the right shows the ways the U.S. government spent money in 1999. The total amount spent was approximately \$1.705 trillion or \$1,705,000,000,000.

U. S. Government Spending



What is the measure of the central angle of each sector?

How much does the government spend on each expense?

Expense	Central Angle	Amount
Interest	$75.6^\circ$	0.35805
Health	$75.6^\circ$	0.35805
Defense	$54^\circ$	0.25575
Soc. Sec.	$90^\circ$	0.42625
Other	$64.8^\circ$	0.3069

$$\begin{aligned} 360^\circ \times 25\% &= 360^\circ \times .25 = 90^\circ \text{ Soc. Sec.} \\ 360^\circ \times 18\% &= 360^\circ \times .18 = 64.8^\circ \text{ Other} \\ 360^\circ \times 15\% &= 360^\circ \times .15 = 54^\circ \text{ Defense} \\ 360^\circ \times 21\% &= 360^\circ \times .21 = 75.6^\circ \text{ Interest} \\ 360^\circ \times 21\% &= 360^\circ \times .21 = 75.6^\circ \text{ Health} \end{aligned}$$

$$\begin{aligned} 1.705 \times .25 &= 0.42625 \text{ Soc. Sec.} \\ 1.705 \times .18 &= 0.3069 \text{ Other} \\ 1.705 \times .15 &= 0.25575 \text{ Defense} \\ 1.705 \times .21 &= 0.35805 \text{ Interest} \\ 1.705 \times .21 &= 0.35805 \text{ Health} \end{aligned}$$

STUDENT COMMENT/

IS VERY VERY EASY.

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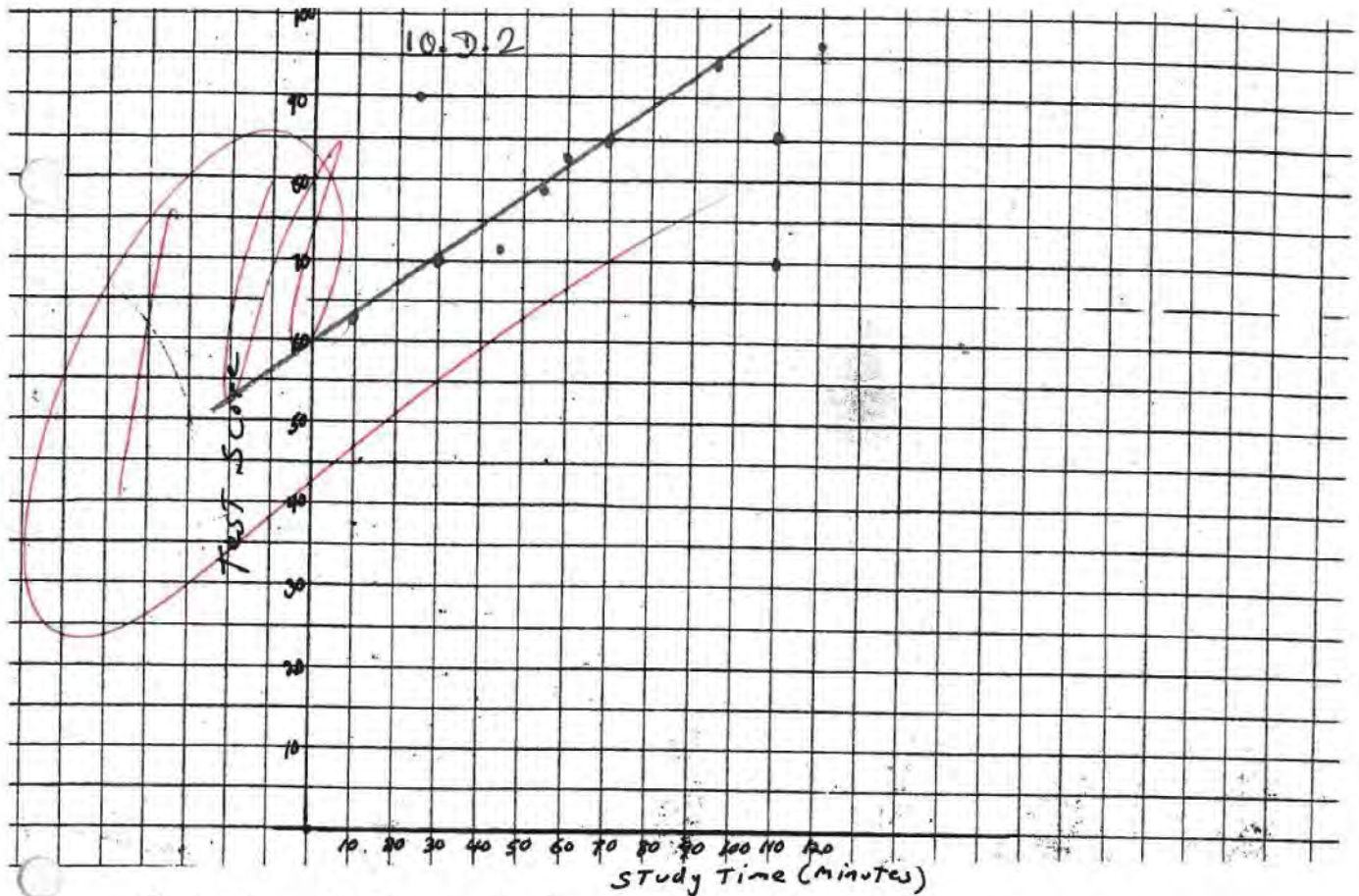
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What was the student asked to do in order to complete the attached piece (i.e., what was the assignment)?  
MAKE A SCATTERPLOT FOR A TABLE OF DATA & ANSWER QUESTION BASED ON THE SCATTERPLOT

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Self-evaluation (optional) - continue on back, if needed: ON EVIDENCE

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### Scatter Plot analysis

Name: Student Name

Date: 5/31/2011

Student	Study Time	Test Score
Tom	120	96
Doug	55	79
Susan	45	73
Lataja	25	90
Ben	110	70
Heather	60	83
Jesus	10	65
Allison	110	85
Hugo	70	85
Alfonso	95	94
Jean	30	70

Directions: Plot these test scores on the graph above.

Answer the following questions using the scatter plot you have created.

1. Who studied for a long time but got a fairly low score? Ben

2. Who studied only a little but got a high score? Lataja

3. Does the scatter plot show a relationship between studytime and student grades?

Explain your answer The student study more they should get a high grade. Because the line is going up.

Student comments

EASY.

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**WORK DESCRIPTION for High School Competency Portfolio in  
 MATHEMATICS**

(Attach one WORK DESCRIPTION to each piece in the portfolio.)

Student's Name: Student Name      Date work was produced: 5-31-11

**The Mathematics competency portfolio must include:**

- Work samples with a minimum of four examples or problems solved by the student for each learning standard listed below.
- Evidence of the student's own thinking and problem solving. Show all work.
- A score (% accurate) for each piece of student work.
- Work produced as independently as possible by the student, with all corrections clearly marked, and a description of the assistance given to the student. The Level of Independence must be indicated below. Work may not be corrected by the teacher and submitted as the student's own work.

**Please indicate the strand and learning standard documented in the attached work sample:**

<input type="checkbox"/> Number Sense and Operations	<input type="checkbox"/> 10.N.1	<input type="checkbox"/> 10.N.2			
<input type="checkbox"/> Patterns, Relations, and Algebra	<input type="checkbox"/> 10.P.2	<input type="checkbox"/> 10.P.4	<input type="checkbox"/> 10.P.5	<input type="checkbox"/> 10.P.7	
<input type="checkbox"/> Geometry	<input type="checkbox"/> 10.G.1	<input type="checkbox"/> 10.G.2	<input type="checkbox"/> 10.G.3	<input type="checkbox"/> 10.G.4	<input type="checkbox"/> 10.G.5
(Choose any three)	<input type="checkbox"/> 10.G.7	<input type="checkbox"/> 10.G.8	<input type="checkbox"/> 10.G.9	<input type="checkbox"/> 10.G.10	<input type="checkbox"/> 10.G.11
<input type="checkbox"/> Measurement	<input type="checkbox"/> 10.M.1	<input type="checkbox"/> 10.M.2	<input type="checkbox"/> 10.M.3		
<input checked="" type="checkbox"/> Data Analysis, Statistics, and Probability	<input type="checkbox"/> 10.D.1	<input checked="" type="checkbox"/> 10.D.2			

**ON THE ATTACHED PIECE:**

What score did the student receive? (Level of Accuracy = 100 %)

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How much was done independently by the student? (Level of Independence = 90 %)

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What type and how much assistance, coaching, and prompting did the student receive on the attached piece?  
BRIEF REVIEW OF THE SLOPE-INTERCEPT FORM OF AN EQUATION i.e.  $y = mx + b$

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What was the student asked to do in order to complete the attached piece (i.e., what was the assignment)?  
MAKE SCATTERPLOTS, DRAW LINES THAT BEST FIT THE DATA, AND WRITE EQUATION FOR THE BEST FITTING LINE!

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Self-evaluation (optional) - continue on back, if needed: ON EVIDENCE

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STUDENT NAME Student Name

DATE 5/3/2011

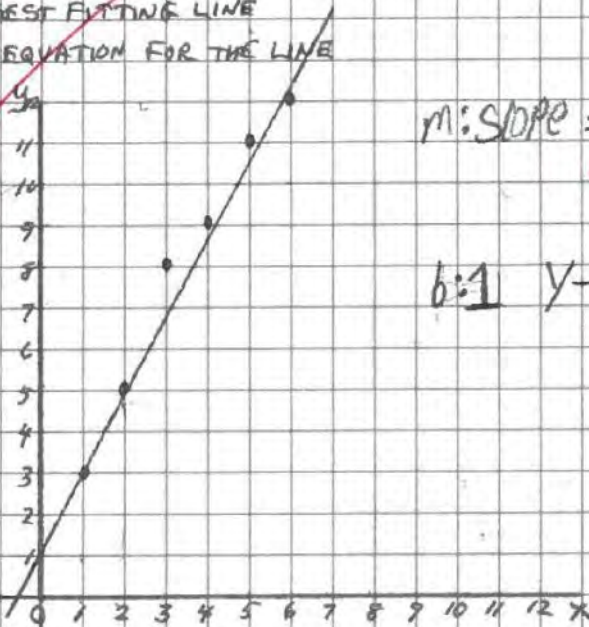
LEARNING STANDARD 10.D.2

- DIRECTIONS: ① DRAW A SCATTERPLOT FOR THE GIVEN DATA  
② DRAW A BEST FITTING LINE  
③ WRITE AN EQUATION FOR THE LINE

1.

x	1	2	3	4	5	6
y	3	5	8	9	11	12

$y = mx + b$   
 $y = 2x + 1$



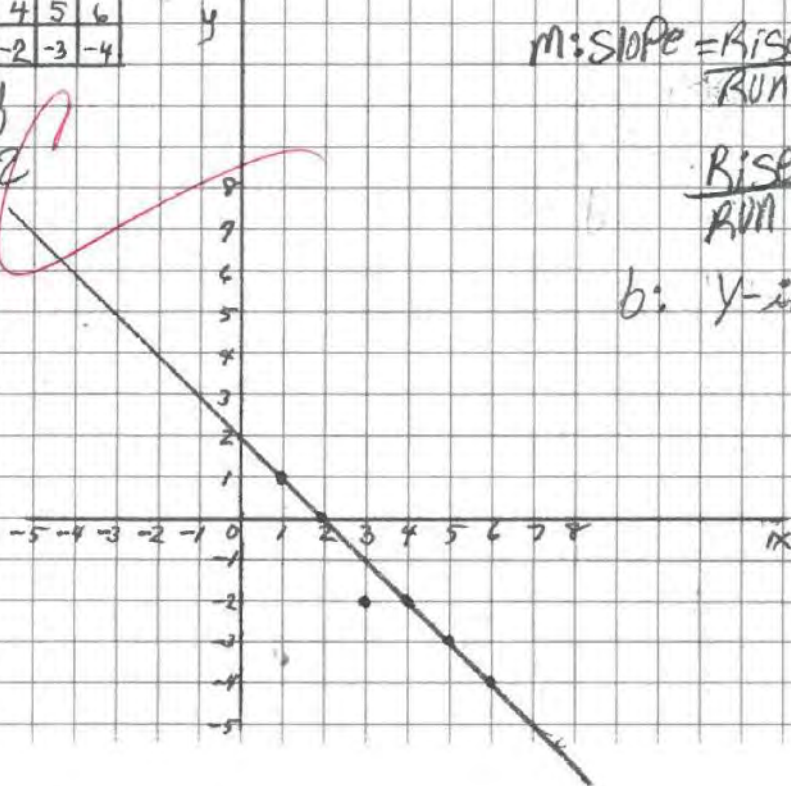
m: SLOPE =  $\frac{\text{RISE}}{\text{RUN}} = \frac{2}{1} = 2$

b: 1 y-intercept = 1.

2.

x	1	2	3	4	5	6
y	1	0	-2	-2	-3	-4

$y = mx + b$   
 $y = -2x + 2$



m: SLOPE =  $\frac{\text{RISE}}{\text{RUN}} = \frac{-1}{1} = -1$

$\frac{\text{RISE}}{\text{RUN}} = \frac{-2}{2} = -1$

b: y-intercept = 2

STUDENT NAME Student Name

DATE 5/31/2011

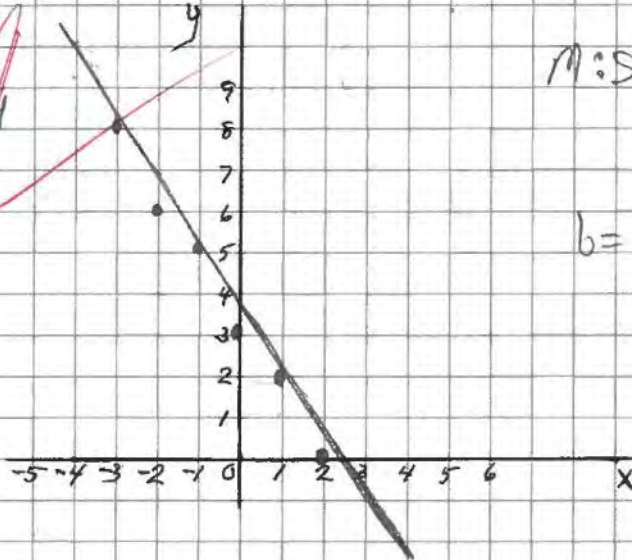
LEARNING STANDARD 10.D.2

3.

x	-3	-2	-1	0	1	2
y	8	6	5	3	2	0

$$y = mx + b$$

$$y = -\frac{3}{2}x + 4$$



$$m: \text{SLOPE} = \frac{\text{RISE}}{\text{RUN}} = \frac{3}{-2} = -\frac{3}{2}$$

$$b = \text{Y-Intercept} = 4$$

STUDENT COMMENT: VERY EASY.