

## 4.1: Graded Homework

Nicole Cook

### ● Question 1

✔ 0/1 pt ↻ 3 ↺ 99

Select all of the following tables which could represent a linear function.

$x$	$f(x)$
0	-5
5	10
10	25
15	40

$x$	$k(x)$
5	20
10	35
20	65
25	80

$x$	$g(x)$
0	6
5	-4
10	-14
15	-24

$x$	$h(x)$
0	6
5	31
10	106
15	231

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### ● Question 2

✔ 0/1 pt ↻ 3 ↺ 99

Select all of the following tables which could satisfy a linear equation.

$x$	$y$
0	-5
5	20
10	45
15	70

$x$	$y$
5	20
10	40
20	80
25	100

$x$	$y$
0	7
5	-13
10	-33
15	-53

$x$	$y$
0	7
5	32
10	107
15	232

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● Question 3

0/1 pt 3 99

A city's population in the year  $x = 1971$  was  $y = 2,496,650$ . In 1952 the population was 2,490,000.

Compute the slope of the population growth (or decline) and choose the most accurate statement from the following:

- The population is decreasing at a rate of 350 people per year.
- The population is decreasing at a rate of 550 people per year.
- The population is decreasing at a rate of 400 people per year.
- The population is increasing at a rate of 550 people per year.
- The population is increasing at a rate of 350 people per year.
- The population is increasing at a rate of 400 people per year.

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● Question 4

0/1 pt 3 99

A city's population in the year  $x = 1968$  was  $y = 3,784,000$ . In 1985 the population was 3,789,950.

Compute the slope of the population growth (or decline) and choose the most accurate statement from the following:

- The population is increasing at a rate of 300 people per year.
- The population is decreasing at a rate of 300 people per year.
- The population is increasing at a rate of 150 people per year.
- The population is decreasing at a rate of 350 people per year.
- The population is increasing at a rate of 350 people per year.
- The population is decreasing at a rate of 150 people per year.

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● Question 5

✔ 0/1 pt ↻ 3 🔁 99

Terry is skiing down a steep hill. Terry's elevation,  $E(t)$ , in feet after  $t$  seconds is given by  $E(t) = 3700 - 80t$ .

The equation tells us that Terry started  Select an answer ▼ and his  Select an answer ▼ is  Select an answer ▼ by  Select an answer ▼.

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● Question 6

✔ 0/1 pt ↻ 3 🔁 99

Characteristics of Linear Functions			
Complete the table below.			
Function	Rate of Change	Initial Value	Behavior
$f(x) = 4x - 10$	<input type="text"/>	<input type="text"/>	Select an answer ▼
$V(t) = 3 - 5t$	<input type="text"/>	<input type="text"/>	Select an answer ▼
$r(a) = 7a$	<input type="text"/>	<input type="text"/>	Select an answer ▼
$C(w) = -9$	<input type="text"/>	<input type="text"/>	Select an answer ▼

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● Question 7

✔ 0/1 pt ↻ 3 🔁 99

A town's population has been growing linearly. In 2003 the population was 34,000. The population has been growing by 2200 people each year.

Write an equation for the population,  $P$ ,  $x$  years after 2003.

$P =$

Use the formula to find the population in 2009:

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● Question 8

0/1 pt  3  99

A clothing business finds there is a linear relationship between the number of shirts,  $n$ , it can sell and the price,  $p$ , it can charge per shirt. In particular, historical data shows that 7000 shirts can be sold at a price of \$54, while 12000 shirts can be sold at a price of \$24. Give a linear equation in the form  $p = mn + b$  that gives the price  $p$  they can charge for  $n$  shirts.

Answer:  $p =$

Round the value of your slope to three decimal places. Be careful to use the proper variable and use the Preview button to check your syntax before you submit your answer.

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● Question 9

0/1 pt  3  99

Depreciation is the decrease or loss in value of an item due to age, wear, or market conditions. We usually consider depreciation on expensive items like cars. Businesses use depreciation as a loss when calculating their income and taxes.

One company buys a new bulldozer for \$119050. The company depreciates the bulldozer linearly over its useful life of 21 years. Its salvage value at the end of 21 years is \$13000.

A) Express the value of the bulldozer,  $V$ , as a function of how many years old it is,  $t$ . Make sure to use function notation.

B) The value of the bulldozer after 5 years is \$ .

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● Question 10

0/1 pt  3  99

Entomologists are biological scientists who study insects. Entomologists studying tree crickets have found that they chirp at different rates depending on the temperature.

The number of chirps per minute,  $C$ , that the tree cricket makes is linearly dependent on the temperature,  $T$ , in Fahrenheit. The crickets do not chirp at all below 35 degrees and at 45 degrees they chirp about 34 times per minute.

A) Express the number of chirps,  $C$ , as a function of the temperature,  $T$ . Be sure to use function notation.

B) How many chirps per minute will crickets make at 65 degrees? \_\_\_\_\_  
Select an answer  $\vee$

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● Question 11

0/1 pt  3  99

Jane has a pre-paid cell phone with NextFell. She can't remember the exact costs, but her plan has a monthly fee and a charge for each minute of calling time. In June she used 300 minutes and the cost was \$130.00. In July she used 800 minutes and the cost was \$305.00.

A) Express the monthly cost  $C$  as a function of  $x$ , the number of minutes of calling time she used.  
Answer:

B) If Jane used 542 minutes of calling time in August, how much was her bill?  
Answer: \$ \_\_\_\_\_

Make sure you include  $C(x)$  in your answer for Part A.

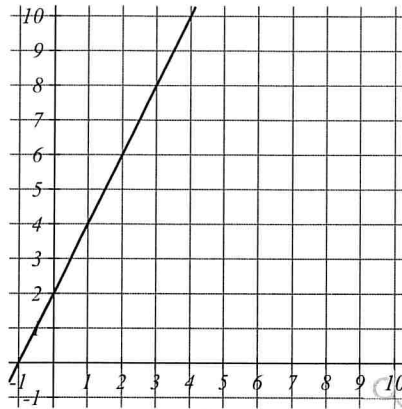
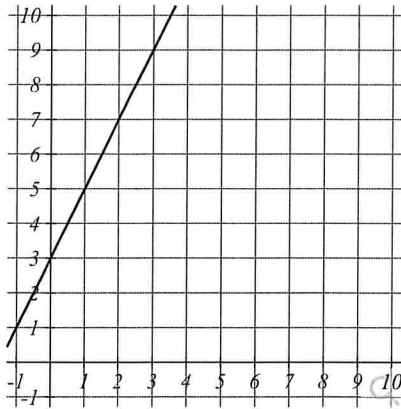
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● Question 12

0/1 pt  3  99

Below, one description, one graph, and one equation are equivalent. Choose the proper set.

- You start with 3 Xbox360 games and each month you buy 2 new games.
- You start with 2 Xbox360 games and each month you buy 3 new games.



$y = 3x + 2$

$y = 2x + 3$

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## 4.2: Graded Homework

Nicole Cook

### ● Question 1

✔ 0/1 pt ↻ 3 ↺ 99

#### Interpreting a Linear Equation

At 12:00 P.M. the volume of water in a tank started changing steadily over time. The volume  $V$  measured in gallons,  $t$  minutes after the water volume started to change is given by the equation  $V = 33900 + 16.95t$ .

The equation tells us that the volume of water in the tank was initially \_\_\_\_\_ gallons, and that the volume is  by \_\_\_\_\_ .

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### ● Question 2

✔ 0/1 pt ↻ 3 ↺ 99

In 2002, a school population was 1818. By 2006 the population had grown to 2058.

1) How much did the population grow between the year 2002 and 2006?

students

2) How long did it take the population to grow from 1818 students to 2058 students?

years

3) What is the average population growth per year?

Select an answer ▼

4) What was the population in the year 2000?

students

5) Find an equation for the population,  $P$ , of the school  $t$  years after 2000.

$P =$

6) Using your equation, predict the population of the school in 2014.

students

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### ● Question 3

✔ 0/1 pt ↻ 3 ↺ 99

Terry is skiing down a steep hill. Terry's elevation,  $E$ , in feet after  $t$  seconds is given by  $E = 3500 - 90t$ , Where  $t$  can be any number from 0 to 10.

- The slope,  $-90$ , is Terry's speed as he skis down the mountain and the y-intercept,  $3500$ , is how far Terry travels in 10 seconds.
- The slope,  $90$ , is how steep the mountain is and the y-intercept,  $3500$ , is Terry's starting elevation.
- The slope,  $-90$ , is Terry's change in elevation for each second and the y-intercept,  $3500$ , is Terry's starting elevation.
- The slope,  $90$ , is how steep the mountain is and the y-intercept,  $3500$ , is the height of the mountain.
- The slope,  $3500$ , is Terry's change in elevation for each second and the y-intercept,  $90$ , is Terry's starting elevation.

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● Question 4

0/1 pt  3  99

Terry is skiing down a steep hill. Terry's elevation,  $E(t)$ , in feet after  $t$  seconds is given by  $E(t) = 2700 - 50t$ .

The equation tells us that Terry started  Select an answer  $\vee$  \_\_\_\_\_ Select an answer  $\vee$  and his  Select an answer  $\vee$  is  Select an answer  $\vee$  by \_\_\_\_\_ Select an answer  $\vee$

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● Question 5

0/1 pt  3  99

The function  $g(x)$  shown in the table below is a linear function. Find its slope, y-intercept, and formula in slope-intercept form.

$x$	-9	-6	-3	0	3	6	9	12	15
$g(x)$	-26	-17	-8	1	10	19	28	37	46

The slope is

The y-intercept is

The slope-intercept form is  $g(x) =$

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● Question 6

0/1 pt  3  99

A linear function is shown in the table below. Find its slope,  $y$ -intercept, and formula in slope-intercept form.

x	-15	-10	-5	0	5	10	15
y	-49	-34	-19	-4	11	26	41

Slope = \_\_\_\_\_

$y$ -intercept = \_\_\_\_\_

$y =$

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● Question 7

0/1 pt  3  99

The phone company NextFell has a monthly cellular plan where a customer pays a flat monthly fee and then a certain amount of money per minute used on the phone. If a customer uses 160 minutes, the monthly cost will be \$80. If the customer uses 740 minutes, the monthly cost will be \$254.

A) Find an equation in the form  $y = mx + b$ , where  $x$  is the number of monthly minutes used and  $y$  is the total monthly of the NextFell plan.

Answer:  $y =$

Do not use any commas in your answer.

B) Use your equation to find the total monthly cost if 857 minutes are used.

Answer: If 857 minutes are used, the total cost will be \_\_\_\_\_ dollars.

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● Question 8

0/1 pt  3  99

Statins are used to keep cholesterol in check and are a top-selling drug in the U.S. The equation:

$$S - 1.6x = 5$$

gives the amount of sales ( $S$ ) of statin in billions of dollars  $x$  years after 1998. According to this equation, how much will/did people in the U.S. spend on statins in the year 2005?

Answer: People in the U.S. will spend \_\_\_\_\_ billion dollars on statins in 2005.

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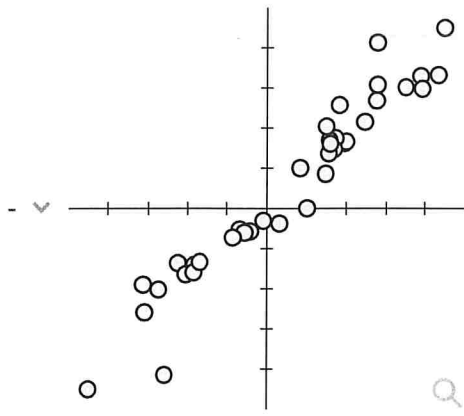
## 4.3 Graded Homework

Nicole Cook

● Question 1

☑ 0/1 pt ↻ 3 ↺ 99

Match each scatterplot shown below with one of the four specified correlations.

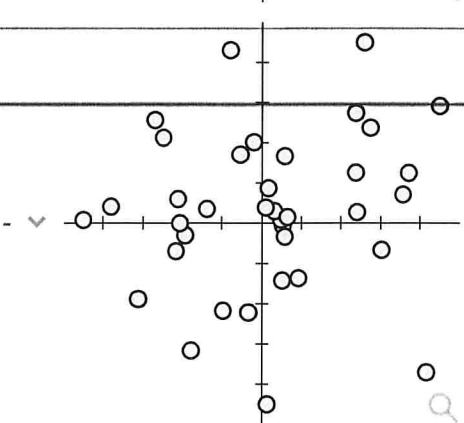
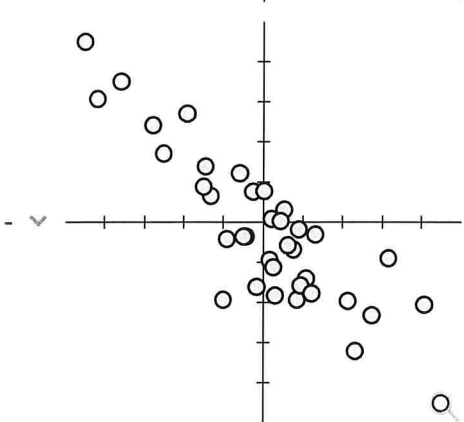
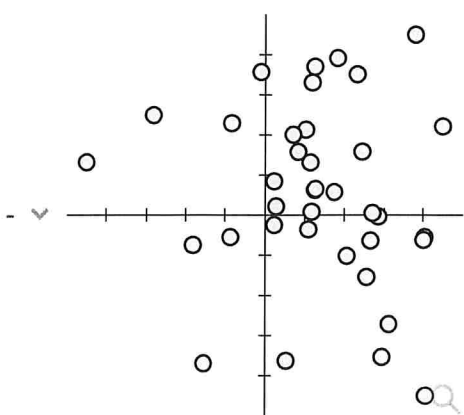


a. -0.12

b. -0.87

c. 0.97

d. 0.14

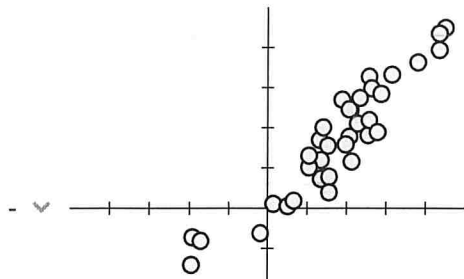


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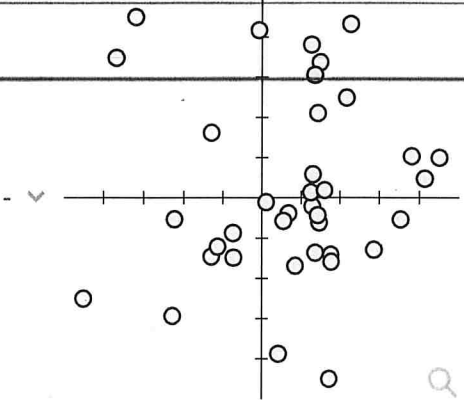
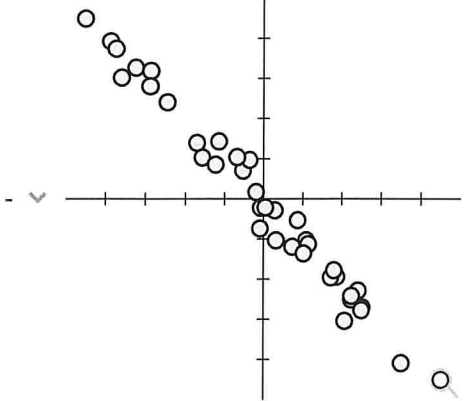
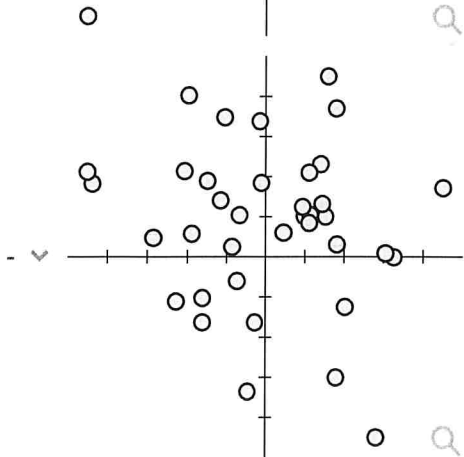
● Question 2

0/1 pt 3 99

Match each scatterplot shown below with one of the four specified correlations.



- a. 0.04
- b. -0.99
- c. 0.96
- d. -0.13

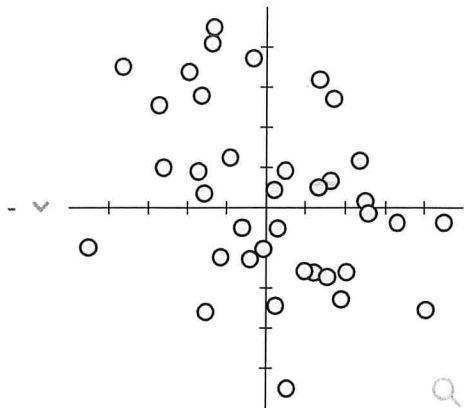


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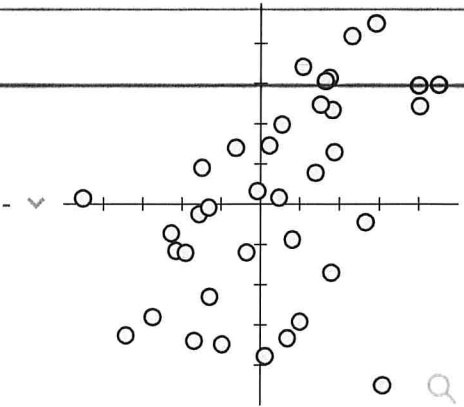
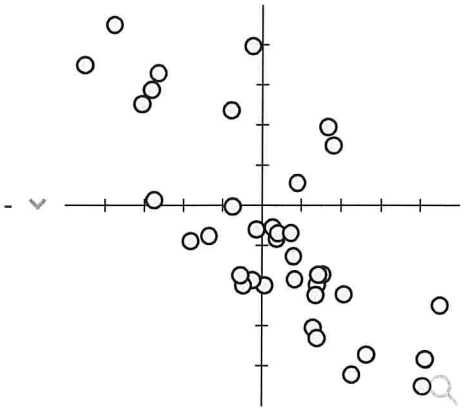
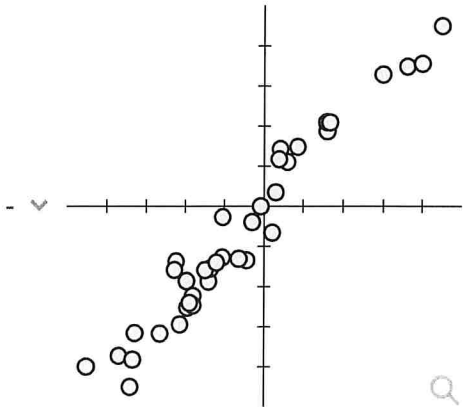
● Question 3

0/1 pt 3 99

Match each scatterplot shown below with one of the four specified correlations.



- a. 0.97
- b. -0.35
- c. -0.74
- d. 0.49

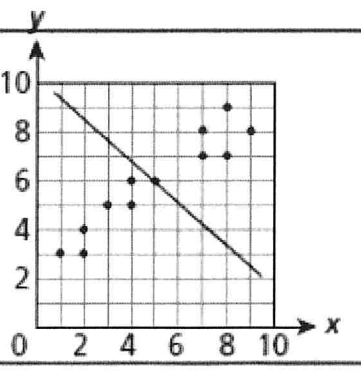
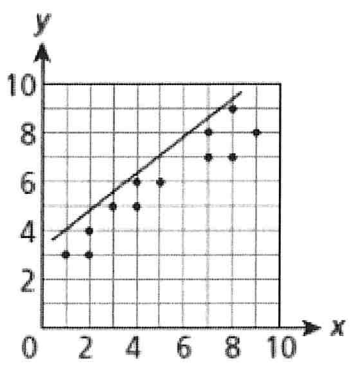
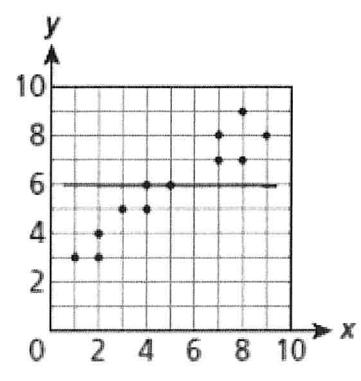
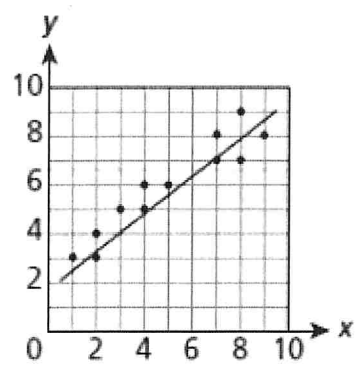


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● Question 4

0/1 pt 3 99

Which line represents the best fit for the scatter plot data?



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## ● Question 5

✔ 0/1 pt ↻ 3 ↺ 99

In the following data,  $x$  is the average number of hours the student spent working on math each week and  $y$  is the final grade in a math class.

hours/week $x$	Grade $y$
4	45.6
8	67.2
8	65.2
8	53.2
10	65
14	90.6
14	80.6
15	91
15	95
16	99.4

The line of best fit is  $y = 4.37 \cdot x + 26.3$ .

What is the predicted value for the final grade when a student spends an average of 7 hours each week on math?

Grade = \_\_\_\_\_ Round to 1 decimal place.

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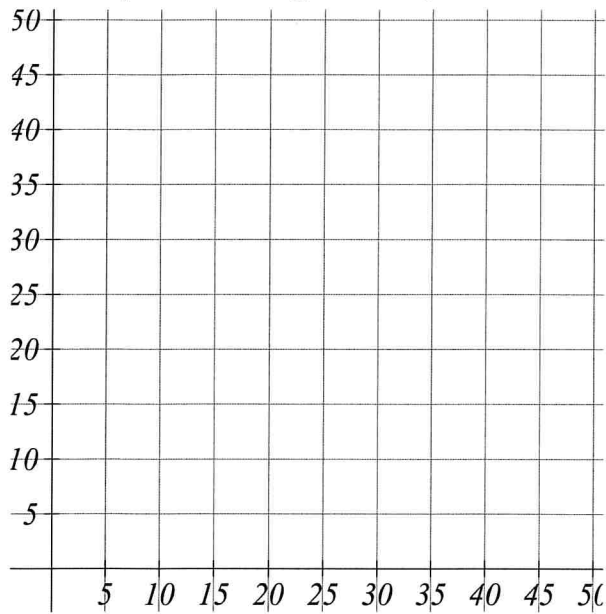
## ● Question 6

✔ 0/1 pt ↻ 3 ↺ 99

The following is data for the first and second Quiz scores for 8 students in a class.

First Quiz	Second Quiz
12	15
13	15
21	16
26	27
28	29
33	30
41	35
44	36

Plot the points in the grid below, then sketch a line that best fits the data.



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