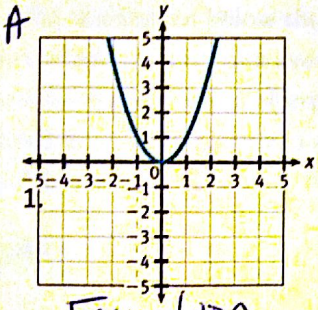
Key

Unit 4 Functions Review (8.5A, 8.5C, 8.5D, 8.5F, 8.5G, 8.5H, 8.11A)

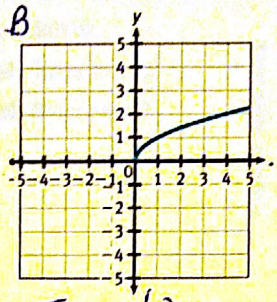
1. Determine if each relation is a function.

A



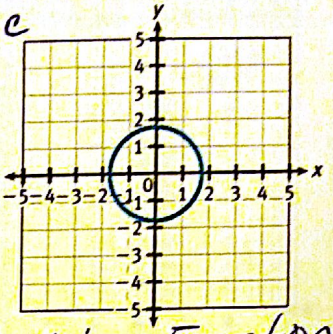
Function

B



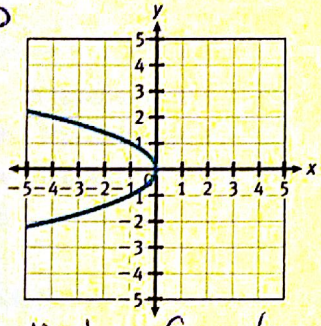
Function

C



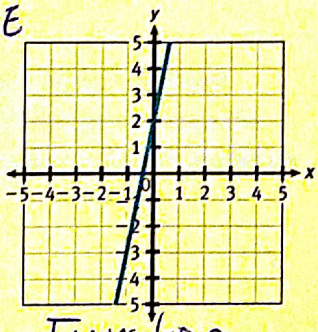
Not a Function

D



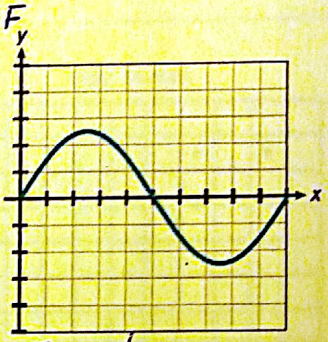
Not a function

E



Function

F



Function

2. Determine if each relation is a function.

A

{(3, 4), (-1, 5), (-9, 0), (3, -2)}

Not a Function

B

{(-5, 0), (-3, 2), (0, 4), (2, -7)}

Function

C

{(-2, 3), (0, 1), (2, -4), (3, -1), (2, 4)}

Not a Function

D

{(5, -2), (3, -5), (2, -5), (0, -2), (-1, -3)}

Function

E

{(1, -5), (2, -3), (3, -1), (4, 0), (5, 2)}

Function

F

{(-4, -1), (-3, -1), (-2, -3), (-1, 0), (-3, 2)}

Not a Function

3. Determine if each relation is a function.

A

x	y
-2	1
0	1
4	1
8	1

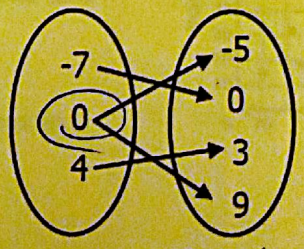
Function

B

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

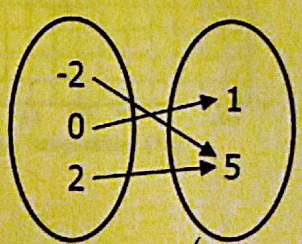
Not a Function

C



Not a Function

D



Function

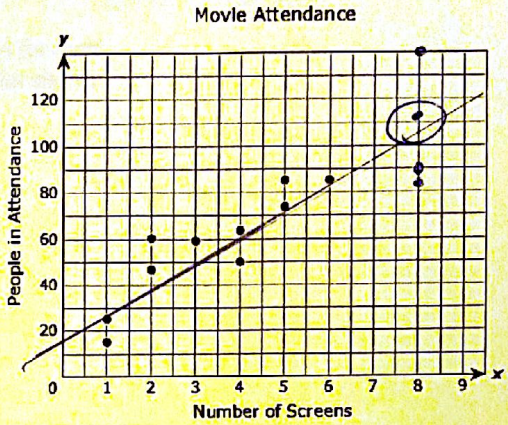
Unit 4 Functions Review (8.5A, 8.5C, 8.5D, 8.5F, 8.5G, 8.5H, 8.11A)

4. The scatterplot below shows movie theaters with different numbers of screens and their average weekly attendance. Based on the trend in the scatterplot, approximately how many people will be in attendance at a movie theater with 8 screens?

A. 90 B. 105

C. 85 D. 140

Draw a line of best fit.



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5. A teacher collected data on 20 students for two different quizzes. The scatterplot below shows the relationship between the number of points scored on Quiz 1 and the number of points scored on Quiz 2.

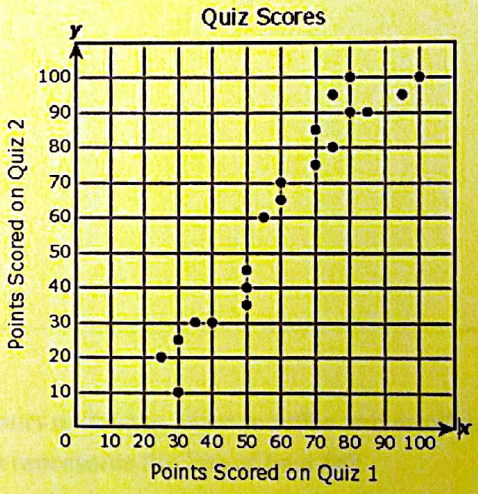
Which statement describes the data?

A. The number of points scored on Quiz 2 was less than the number of points scored on Quiz 1 for any student who scored at least 50 points on Quiz 1.

B. The number of points scored on Quiz 2 was less than the number of points scored on Quiz 1 for any student who scored 50 or fewer points on Quiz 1.

C. The number of points scored on Quiz 2 was greater than the number of point scored on Quiz 1 for any student who scored 50 or fewer points on Quiz 1.

D. The number of points scored on Quiz 2 was greater than the number of points scored on Quiz 1 for any student who scored at least 50 points on Quiz 1.



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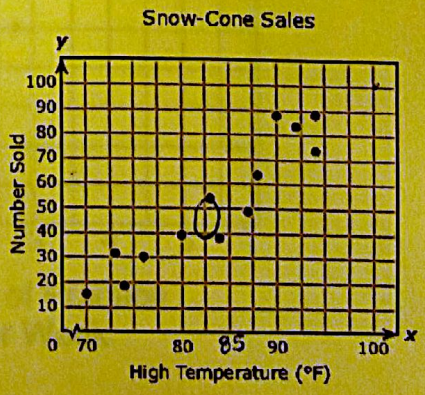
6. The scatterplot below shows the relationship between the daily high temperature and the number of snow cones sold at a concession stand on that day.

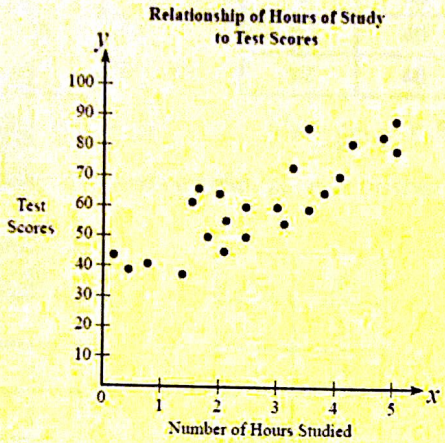
Based on the scatterplot, approximately how many snow cones will be sold on a day when the high temperature is 82°F? 40-50

Based on the scatterplot, approximately how many snow cones will be sold on a day when the high temperature is 100°F? ≈ 100

Bassed on the scatterplot, approximate the temperature if the concessin stand sells 65 snow cones. ≈ 85-90



7. Mrs. Kramer asked her students to report the number of hours they studied for their statistics test. The day after the test, she plotted the results on the scatterplot shown below.



Which of the following equations correctly approximates the line of best fit?

A. $y = -10x + 30$
B. $y = -10x + 60$
C. $y = 10x + 30$
D. $y = 10x + 60$

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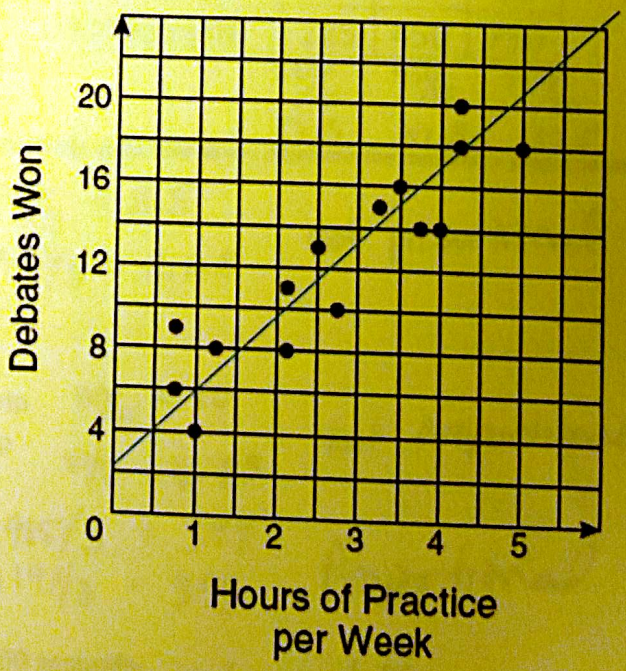
8. The coaches of a group of debate teams answered a survey about hours of debate, team practice and number of team wins. The graph shows the results of this survey. Which equation best represents the line of best fit?

A. $y = 7x + 5$

B. $y = -2x + 1$

C. $y = 4x + 2$

D. $y = 4x + 8$



Unit 4 Functions Review (8.5A, 8.5C, 8.5D, 8.5F, 8.5G, 8.5H, 8.11A)

9. Tell whether or not each table represents a proportional relationship. How do you know?

x	y
1	6
2	9
3	12

$6/1 = 6$
$9/2$
$12/3 = 4$

Not proportional

x	y
9	36
10	40
12	48

$36/9 = 4$
$40/10 = 4$
$48/12 = 4$

Proportional

10. Which table represents a proportional relationship? How do you know?

Constant of Proportionality
y/x

A

x	y
1	5
2	8
3	11
4	14

$5/1 = 5$
$8/2 = 4$
$11/3$
$14/4 = 7/2$

C

x	y
1	5
3	15
5	20
5	25

$5/1 = 5$
$15/3 = 5$
$20/5 = 4$
$25/5 = 5$

B

x	y
1	5
3	15
5	25
7	35

$5/1 = 5$
$15/3 = 5$
$25/5 = 5$
$35/7 = 5$

D

x	y
2	8
4	20
6	36
8	56

$8/2 = 4$
$20/4 = 5$
$36/6 = 6$
$56/8 = 7$

11. What is the constant of proportionality for the data in the table below?

12

X	Time (h)	2	5	9	11
Y	Charge ($)	24	60	108	132

$24/2$ $60/5$ $108/9$ $132/11$
12 12 12 12

37.5

X	Time (h)	6	12	20
Y	Distance (mi)	225	450	750

$225/6$ $450/12$ $750/20$
37.5 37.5 37.5

12. Which situation represents a proportional relationship: (hint: how do you determine the constant of proportionality?)

A.) 3 packages of Oreo Cookies costs $7.50
5 packages of Oreo Cookies costs $11.25

$7.50/3 = 2.5$
$11.25/5 = 2.25$
Not proportional

B.) 11 students costs $110 to go on the UNT Field Trip
8 students costs $70 to go on the UNT Field Trip

$110/11 = 10$
$70/8 = 8.75$
Not proportional

C.) 5 new Chrome Book computers costs $1,995.
3 new Chrome Book computers costs $1,197.

$1995/5 = 399$
$1197/3 = 399$
Proportional

D.) 108 oz. of water drains from a cooler in the first 60 seconds.
64 oz. of water drains from a cooler in 40 seconds.

$108/60 = 1.8$
$64/40 = 1.6$
Not proportional

Unit 4 Functions Review (8.5A, 8.5C, 8.5D, 8.5F, 8.5G, 8.5H, 8.11A)

13. The Carmike Theater has a popcorn bucket deal. There is an initial charge for the bucket plus an additional charge each time you re-fill your bucket. The table below shows the total amount for the bucket including different amounts of filled buckets of popcorn.

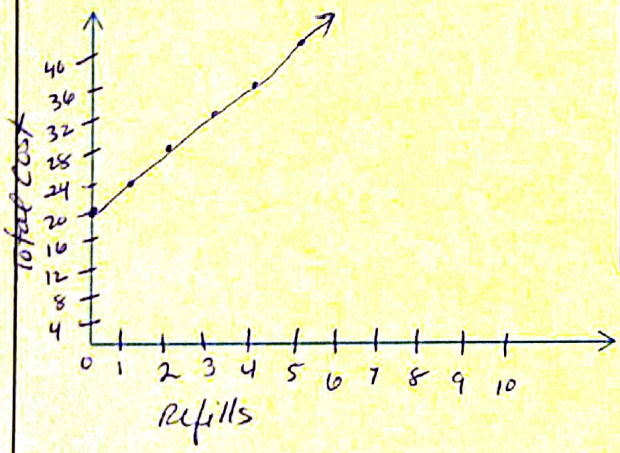
Filled Buckets	Total Cost
x	y
0	20
1	24
2	28
4	36
5	40

3 32
1 4

$m = 4$
$b = 20$

Write an **equation** that best represents the relationship: $y = 4x + 20$

Graph the data:



Is this situation a **function**? Is it **linear**? Is it **proportional** or **non-proportional**?

Function
Linear
Non-proportional

Write a verbal description: The bucket costs:$ 20 , plus $ 4 for **each** popcorn refill