Name: _____ Math 1 Test Chapter 3, Practice Test

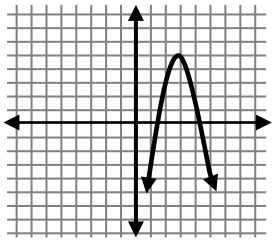
1. Determine if each relation is a function (yes or no). If the relation is a function, determine if it is a one-to-one function.

   a. {(-3, 9), (-2, 8), (-1, 7), (0, 6), (5, 2)}

   Function? _____

   One-to-one? _____

   b.



   Function? _____

   One-to-one? _____

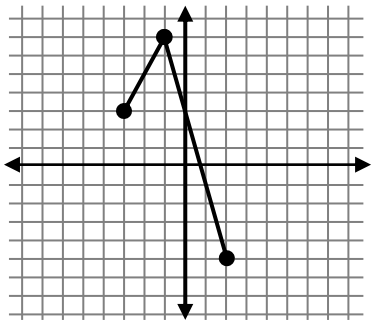
2. Determine the domain and range of each function:

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

   Domain: _____

   Range: _____

   b.



   Domain: _____

   Range: _____

Find the value of each function:

3. $f(x) = 6x + 5$

   Find $f(-4)$

4. $f(x) = -3(x + 4) - 12$

   Find $f(3)$

Find a linear function for each:

5.

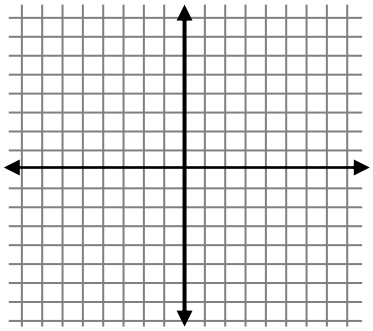
x	-8	-4	0	4
y	-15	-7	1	9

   Find a linear function for y in terms of x.

6. A hot air balloon is currently at a height of 900 feet. The balloon is descending by 10 feet minute. Find a function for the balloon's height after x minutes

7. Sketch a graph of the function:

$f(x) = 2(x-4) - 5$



8. For each sequence, determine if it is an arithmetic sequence. If yes, find the common difference.

a. 13, 9, 5, 9, 13 . . . arithmetic? _____ If yes, common difference = _____

b. -8, -14, -20, -26, -32 . . . arithmetic? _____ If yes, common difference = _____

c. -9, 2, 13, 24, 35 arithmetic? _____ If yes, common difference = _____

Find an explicit and recursive formula for each arithmetic sequence:

9. 33, 29, 25, 21, . . .

Explicit: $a_n =$ _____

Recursive: $a_1 =$ _____

$a_n =$ _____

10. -29, -21, -13, -5 . . .

Explicit: $a_n =$ _____

Recursive: $a_1 =$ _____

$a_n =$ _____

11. Given an arithmetic sequence with the Explicit formula $a_n = 26 + (n-1)7$

Find the recursive formula:

Recursive: $a_1 =$ _____

$a_n =$ _____

12. Given an arithmetic sequence with the recursive formula $a_1 = 2$ and $a_n = a_{n-1} + 9$

Find the explicit formula:

Explicit: $a_n =$ _____

13. Given the arithmetic sequence:

25, 22, 19, 16, . . .

Find the explicit formula:

$a_n =$ _____

Use the formula to find the 31st term

$a_{31} =$ _____

14. A parking lot charges \$3 for one hour of parking, \$9 for two hours, and \$15 for three hours.

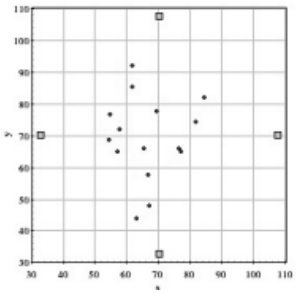
Find an explicit formula of the charge for n hours.

$a_n =$ _____

How much would the parking charge for 22 hours of parking? _____

15. Describe each correlation as positive, negative, or none

a. b. c.



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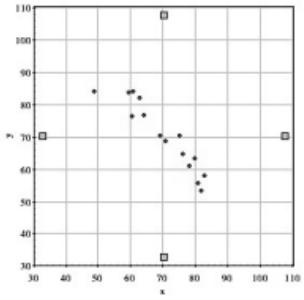

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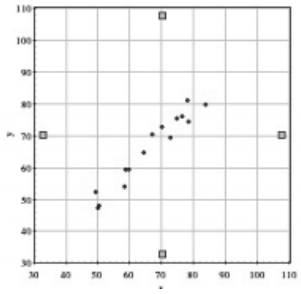

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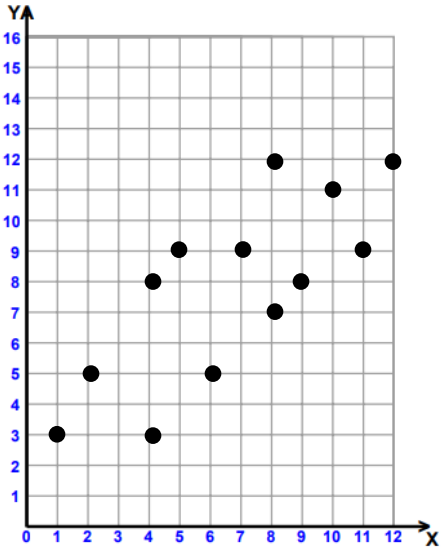
16. a. Draw an estimated line of best fit on the scatterplot



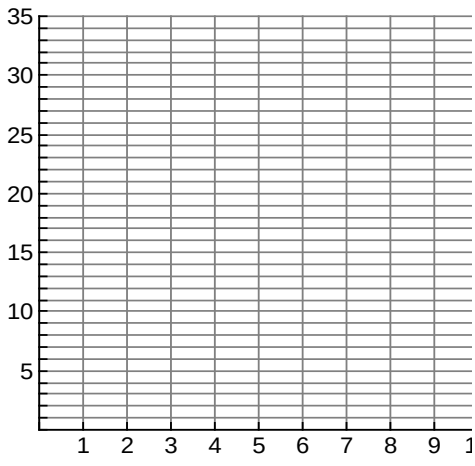
b. Write an equation in point-slope form for the estimated line of best fit:

_____

17. A bakery shop owner is baking cakes every hour. The number of cakes that she has made after each hour is

Hours (x)	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Cakes (y)	0	3	5	11	12	15	19	24	33

Label axes and draw a scatterplot.



18. a. Draw an estimated line of best fit on the scatterplot in problem 17.

b. Write an equation in point-slope form for the estimated line of best fit:

_____

19. Describe the correlation for each given r value:

a. r = -0.5 _____

b. r = 0.9 _____

c. r = -1 _____

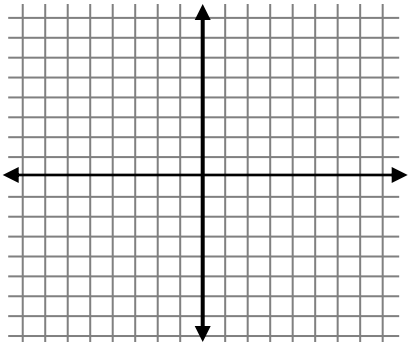
20. The data in the given table has a trend line of y = -2x + 15

x	1	2	3	4
y	16	9	8	11

Fill in the table for the residuals based on the trend line

x	1	2	3	4
Residual				

21. Graph the line: $y = -3x + 5$



22. Solve for x: $|3x - 4| = 8$

23. Find the equation of the line in point-slope form:

Through the points (2, 3) and (4, -6)

Point-slope form: _____

24. Solve for x: $\frac{x}{2} - \frac{3}{4} = \frac{5}{8}$

25. Solve and graph the solution: $-5x + 8 \leq 28$