Tough answer

Name _____

enVision Algebra 1
PearsonRealize.com

3-4 Additional Practice

Arithmetic Sequences

Tell whether or not each sequence is an arithmetic sequence. If it is an arithmetic sequence, give the common difference.

1. 4, 8, 12, 16, ...
   arithmetic; 4
2. −11, 5, 0, 6, ...
   not arithmetic
3. 12, 23, 34, 45, ...
   arithmetic; 11

Write a recursive formula and an explicit formula for each arithmetic sequence.

4. 9, 15, 21, 27, ...
   Recursive:
   $a_1 = 9$
   $a_n = a_{n-1} + 6$
   Explicit:
   $a_n = 3 + 6n$
5. 1.5, 2.25, 3, 3.75, ...
   Recursive:
   $a_1 = 1.5$
   $a_n = a_{n-1} + 0.75$
   Explicit:
   $a_n = 0.75 + 0.75n$
6. 7, 0, −7, −14, ...
   Recursive:
   $a_1 = 7$
   $a_n = a_{n-1} - 7$
   Explicit:
   $a_n = 14 - 7n$

Write an explicit formula for each recursive formula and a recursive formula for each explicit formula.

7. $a_1 = 5$
   $a_n = a_{n-1} + 3$
   $a_n = 2 + 3n$
8. $a_1 = -8$
   $a_n = a_{n-1} - 3$
   $a_n = -5 - 3n$
9. $a_n = 15 + 4n$
   $a_1 = 19$
   $a_n = a_{n-1} + 4$

10. You are given the first four terms of an arithmetic sequence. Why might you use a recursive formula? Why might you use an explicit formula? Under what conditions might a recursive formula be preferred over the explicit formula? Under what conditions might an explicit formula be preferred over the recursive formula?
    Sample answer: If you need to know the 7th, 8th, and 9th terms, the recursive form might be preferred as you need to apply the common difference successively to the next few terms. If you want to know terms, such as those beyond 100, then the explicit would be preferred.

11. You open a savings account with a $400 deposit. Each month after that, you deposit $25. Write an explicit rule to represent the amount of money you deposit into your savings account. How much money will you have in the account on month 12?
    $a_n = 375 + 25n$; $675

Name _____

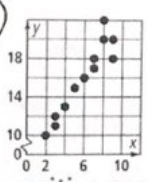
enVision Algebra 1

PearsonRealize.com

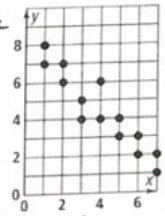
3-5 Additional Practice

Scatter Plots and Lines of Fit

What is the association between the *x*- and *y*-values for each graph?

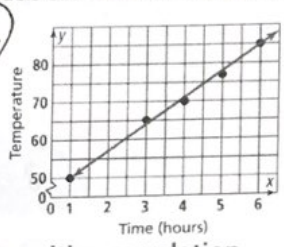
11. 

positive association

12. 

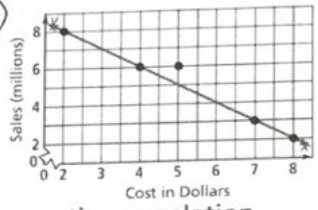
negative association

Describe the type of correlation each scatter plot shows. Draw a trend line that models each data set and find the equation of that trend line.

13. 

positive correlation

Sample answer: $y = 7x + 43$

14. 

negative correlation

Sample answer: $y = -x + 10$

15. For the trend line in Item 3, what would the expected temperature be after 2 hours? Explain what this means in the context of the data.

Sample answer: The expected temperature is 57°. The line shows an increase of about 7° per hour.

16. For the trend line in Item 4, what would the expected sales be if the cost was set at $6.50? Explain what this means in the context of the data.

Sample answer: The expected sales would be about 3,500,000. The sales decrease by about 1,000,000 units per dollar increase in cost.

17. Would you expect the trend line for the temperature to continue in the same direction indefinitely? Explain.

Sample answer: No, the temperature would drop as the sun sets. Also, sooner or later new seasons would occur and the overall temperature would either be warmer or colder.

18. strong positive correlation

19. strong negative correlation

20. weak correlation