

Additional Practice 14-4 Reasoning

Another Look!

A blue swimming pool contains 5 inches of water. It is filled with 2 more inches of water each hour. A red swimming pool contains 25 inches of water. The water is drained 3 inches each hour. How much water will be in the red pool when the blue pool has 19 inches of water?

You can use a table and graph to model the math.

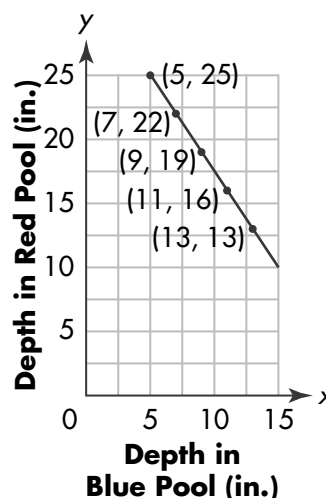
Depth of Water (in.)					
Hour	Start	1	2	3	4
Blue Pool	5	7	9	11	13
Red Pool	25	22	19	16	13

The ordered pairs show a pattern. Each hour, the x-coordinate increases by 2, and the y-coordinate decreases by 3.

Extend the pattern until the x-coordinate is 19:

(15, 10), (17, 7), (19, 4)

When the blue pool has 19 inches of water, the red pool will have 4 inches of water.



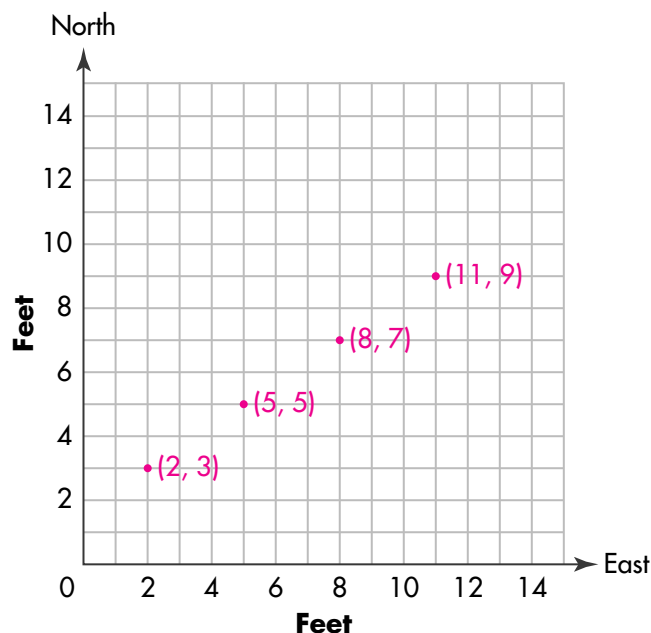
Reasoning

A tree farm owner uses a grid to mark where to plant trees in the spring. The first tree is planted at (2, 3). Each of the other trees is planted 3 feet east and 2 feet north of the previous tree.

1. Draw and label the locations of the first four trees on the grid.
2. Describe the pattern of the points that represent the tree's locations.

A line can be drawn through the points. The x-coordinate increases by 3, and the y-coordinate increases by 2.

3. What is the location of the seventh tree?
Explain how you determined your answer.
(20, 15); I extended the pattern for 3 more trees: (14, 11), (17, 13), (20, 15).





Performance Task

Apple Picking

The Bransen Family picked 20 red apples, 28 yellow apples, and $\frac{1}{2}$ bushel of green apples. Starting the following day, they ate 2 red apples and 3 yellow apples every day. When 6 red apples are left, how many yellow apples will be left?

You can use the coordinate grid to reason about the relationship between the points.



4. **Make Sense and Persevere** Complete the table to show how many red and yellow apples there are every day for the first 4 days.

Number of Apples					
Day	Start	1	2	3	4
Red Apples	20	18	16	14	12
Yellow Apples	28	25	22	19	16

5. Label the graph and then plot the data points from your table.

Check students' work.

6. **Reasoning** Can you draw a line through the plotted points? If so, what does that mean?

Yes; It means that the ordered pairs follow a pattern.

7. **Look for Relationships** Is there a pattern? If so, describe it.

Yes; Each day, the x-coordinate decreases by 2, and the y-coordinate decreases by 3.

8. **Reasoning** When 6 red apples are left, how many yellow apples will there be? Explain how you determined your answer.

7 yellow apples; Sample explanation: I extended the pattern until the x-coordinate was 6: (10, 13), (8, 10), (6, 7).

