

Lesson 3.1.3 Resource Page
 Problem 3-18

Tile Pattern:

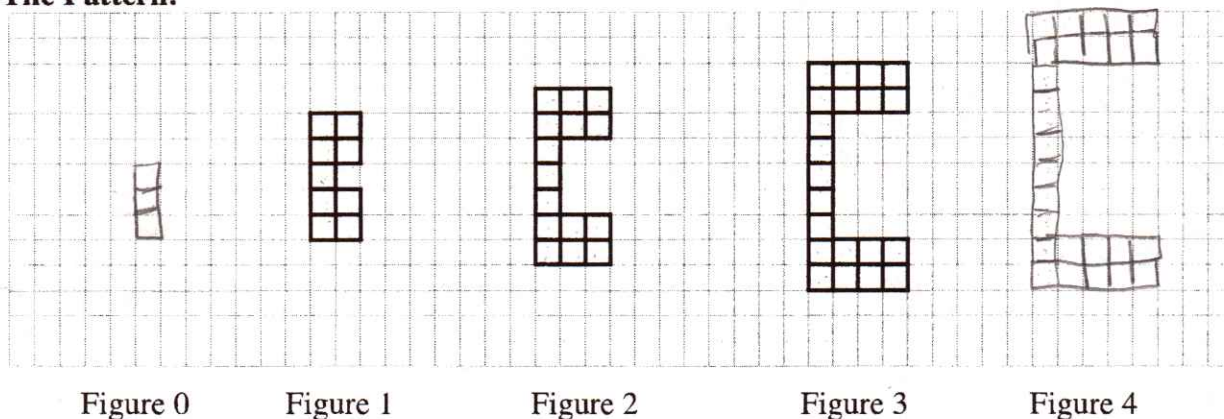
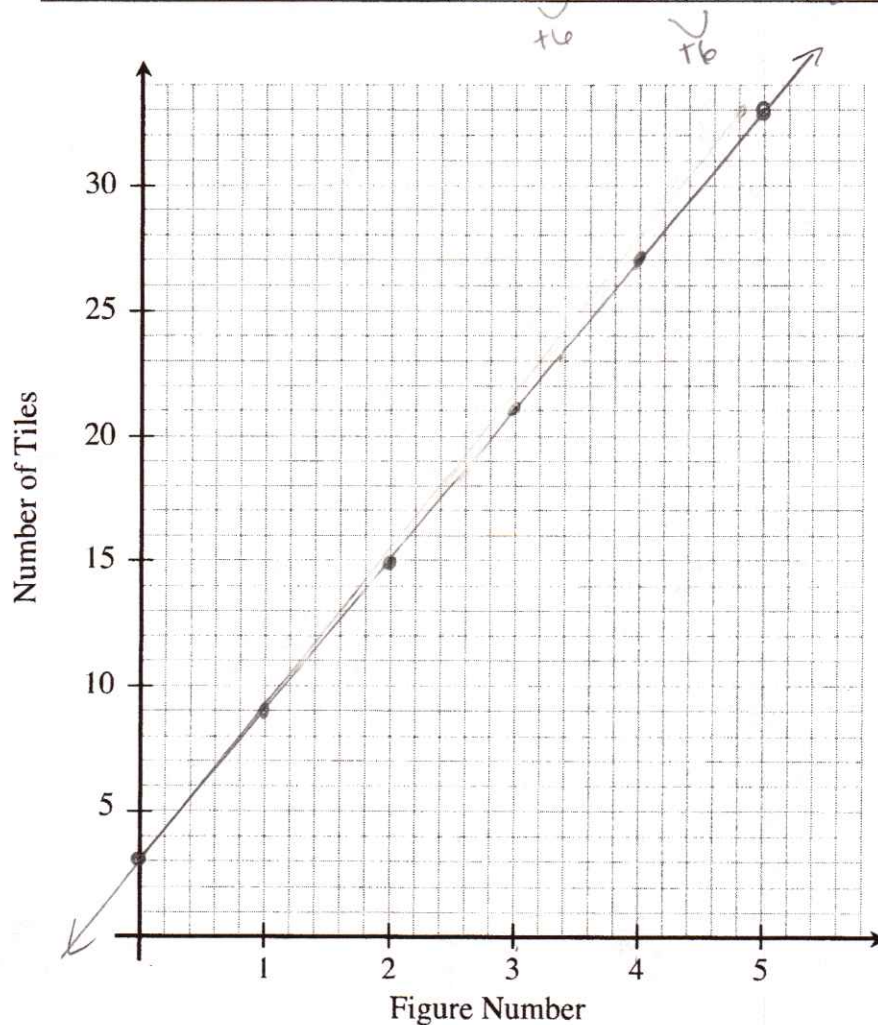


Table:

Figure Number	0	1	2	3	4	5
Number of Tiles	3	9	15	21	27	33

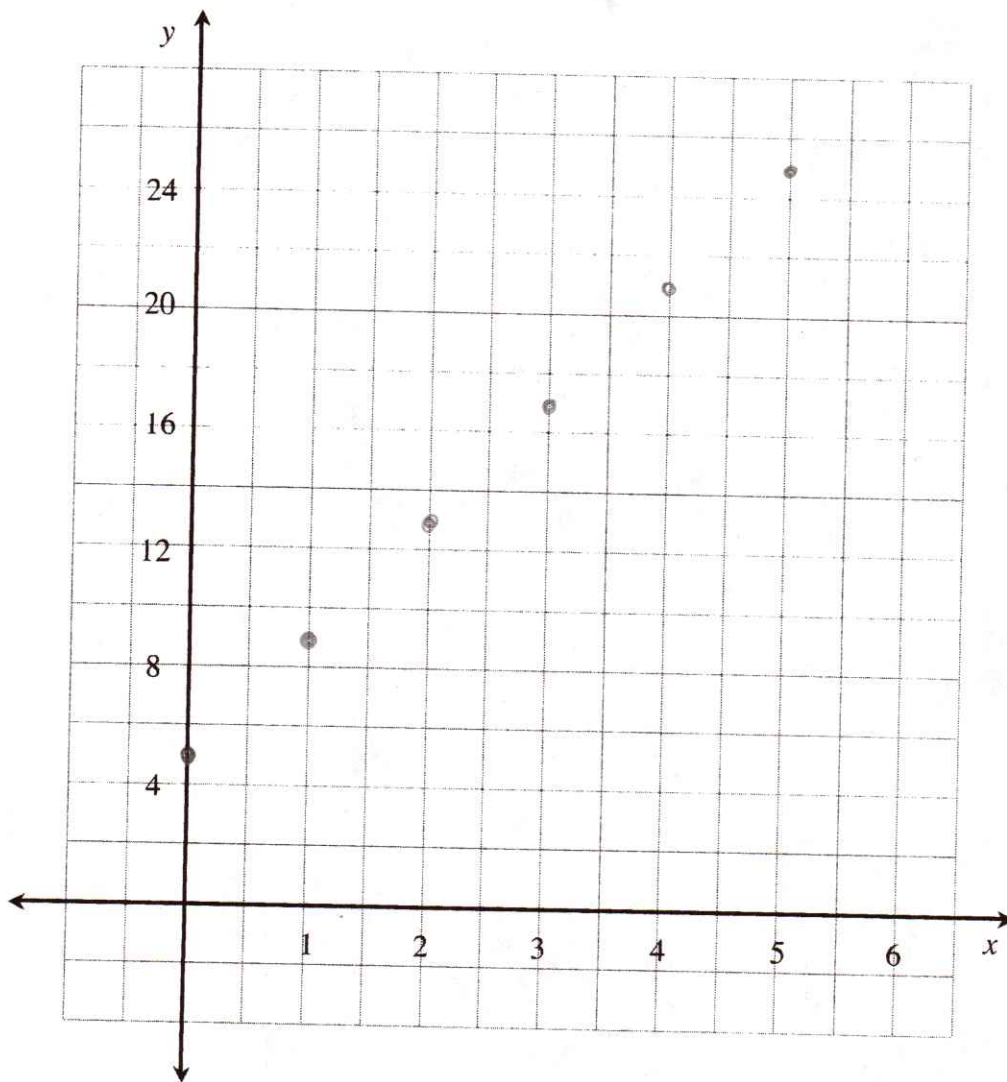
Graph:



KEY 10/28

Lesson 3.1.2B Resource Page
Problems 3-11 and 3-12

John's Giant Redwood



Number of Years after Planting	0	1	2	3	4	5	6
Height of Tree (in feet)	5	9	13	17	21	25	29

Rule:

$\leftarrow -4$ $\leftarrow -4$ $\leftarrow -4$ $\rightarrow +4$ $\rightarrow +4$ $\rightarrow +4$ $\rightarrow +4$

John's Giant Redwood

John found the data in the table below about his favorite redwood tree. He wondered if he could use it to predict the height of the tree at other points of time. Consider this as you analyze the data and answer the questions below. Be ready to share your answers with the class.

Number of Years after planting	3	4	5
Height of Tree (in Feet)	17	21	25

- a. How tall was the tree 2 years after it was planted? What about 7 years after it was planted?

How do you know?

13 feet @ 2 yrs 33 feet @ 7 years; expanded table

- b. How tall was the tree the year it was planted?

It was 5 ft when planted

- c. Estimate the height of the tree 50 years after it was planted. How did you make your prediction?

at 5 years \rightarrow 25 feet

$$\frac{5 \text{ yrs}}{25 \text{ ft}} = \frac{50 \text{ yr}}{x \text{ feet}} \rightarrow 5x = 1250$$

$$x = 250 \text{ ft}$$

Actual answer

$$y = 4(50) + 5$$

$$y = 205 \text{ ft}$$

John decided to find out more about his favorite redwood tree by graphing the data.

- a. Plot the points that represent the height of the tree over time. What does the graph look like?

straight line

- b. Does it make sense to connect the points?

yes, it is growing throughout the year

- c. According to the graph, what was the height of the tree 1.5 years after it was planted?

~10-11 feet

(using equation @ 1.5, the tree is 11 feet)

- d. Can you use the graph to predict the height of the redwood tree 20 years after it was planted?

no, it only goes to 6.5 years

- e. Could I use an equation to make the 20 year prediction? If so, what is the equation (rule) for the growth of the tree?

$$m = 4 \text{ ft/year}$$

$$b = 5 \text{ ft}$$

$$y = 4x + 5$$

$$y = 4(20) + 5$$

$$y = 85 \text{ ft } 20 \text{ years after it was planted}$$

Answers will vary based on thought process.