Students are asked to use their observations and pattern recognition skills to extend patterns and predict the number of dots that will be in a figure that is too large to draw. Later, variables will be used to describe the patterns.

**Example**

Examine the dot pattern at right. Assuming the pattern continues:

a. Draw Figure 4.

b. How many dots will be in Figure 10?

**Solution:**

The horizontal dots are one more than the figure number and the vertical dots are even numbers (or, twice the figure number).

Figure 1 has 3 dots, Figure 2 has 6 dots, and Figure 3 has 9 dots. The number of dots is the figure number multiplied by three.

Figure 10 has 30 dots.

**Problems**

For each dot pattern, draw the next figure and determine the number of dots in Figure 10.

1. ![Figure 1](image1) ![Figure 2](image2) ![Figure 3](image3)

2. ![Figure 1](image4) ![Figure 2](image5) ![Figure 3](image6) ![Figure 4](image7)

3. ![Figure 1](image8) ![Figure 2](image9) ![Figure 3](image10)

4. ![Figure 1](image11) ![Figure 2](image12) ![Figure 3](image13)

5. ![Figure 1](image14) ![Figure 2](image15) ![Figure 3](image16)

6. ![Figure 1](image17) ![Figure 2](image18) ![Figure 3](image19)
Answers

1. 50 dots

2. 31 dots

3. 110 dots

4. 22 dots

5. 40 dots

6. 140 dots