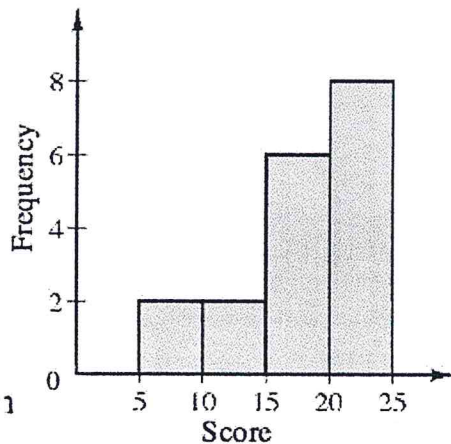


Histograms:

Below is an **EXAMPLE** of a histogram. Please read the information to the right on how to use bins (or intervals). Bins always include a range of numbers and the number written on the horizontal axis is the **beginning** of the next group or range of numbers. The vertical label **Frequency** is a count of the number of scores in the given range.

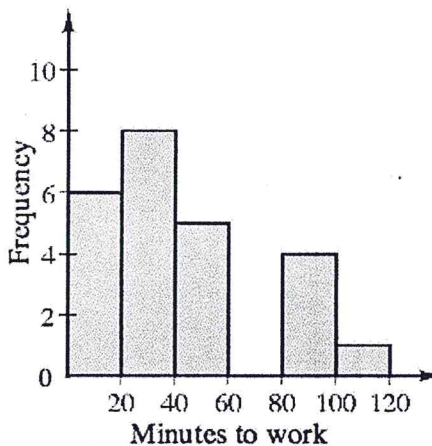


The histogram to the left is for test scores in a math class:

7, 7, 12, 13, 15, 16, 16, 16, 18, 19, 20, 20, 20, 21, 21, 22, 23, 24

The interval between 10 and 15 includes only the two scores 12 and 13. The interval between 15 and 20 includes only the six scores of 15, 16, 16, 16, 18, and 19.

Now use the histogram below to answer the following questions.

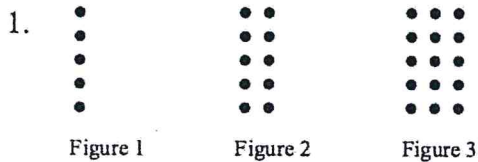


Mr. Diaz surveyed his employees about the time it takes them to get to work. Use the histogram of their responses to answer the following:

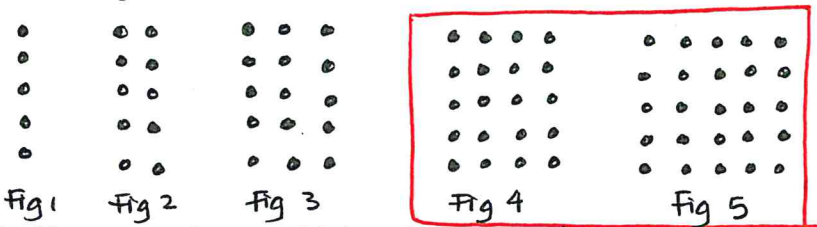
- a) How many employees completed the survey?  
 $6 + 8 + 5 + 4 + 1 = 24$  people (or employees)
- b) How many employees get to work in less than 20 minutes?  
 6 employees
- c) How many employees get to work in less than 40 minutes?  
 $6 + 8 = 14$  employees
- d) How many employees take 60 minutes? none
- e) How many employees take 80 minutes?

You can't be sure because the graph shows 4 people in the 80-99 range. However, you don't know the exact time for any specific employee.

Patterns



a) Use the space below to copy the three figures in the pattern and extend the pattern to Figure 4 and Figure 5.



b) How many dots would there be in the 10<sup>th</sup> figure?

$(10)(5) = 50 \text{ dots}$

c) How many dots would there be in the 30<sup>th</sup> figure?

$(30)(5) = 150 \text{ dots}$

d) How many dots would there be in the 100<sup>th</sup> figure?

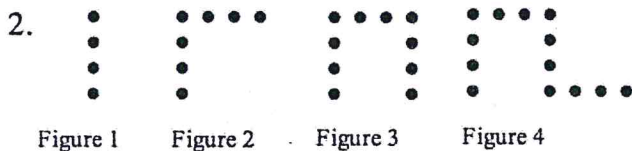
$(100)(5) = 500 \text{ dots}$

e) Write a complete word sentence describing the process you used to compute the number of dots in the 100<sup>th</sup> figure.

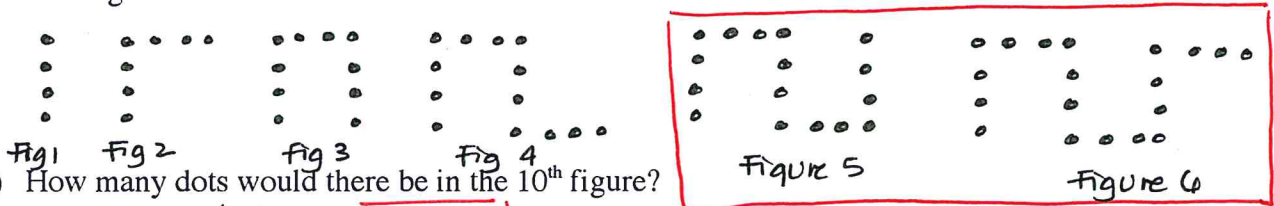
There are 100 columns of 5 dots each so you multiply 100 times 5.

f) What is a formula or rule for determining the number of dots in any figure in the pattern? Use the letter *n* in your formula to represent the pattern's figure number.

Number of dots in Figure (*n*) =  $5n$  or  $n \cdot 5$



g) Use the space below to copy the four figures in the pattern and extend the pattern to Figure 5 and Figure 6.



h) How many dots would there be in the 10<sup>th</sup> figure?

$3(10) + 1 = 31 \text{ dots}$

i) How many dots would there be in the 30<sup>th</sup> figure?

$30(3) + 1 = 91 \text{ dots}$

j) How many dots would there be in the 100<sup>th</sup> figure?  $3(100) + 1 = 301 \text{ dots}$

k) Write a complete word sentence describing the process you used to compute the number of dots in the 100<sup>th</sup> figure.

Three dots are added each time the figure number increases. Figure 1 has 4 dots.  
so  $3(100) + \text{the one extra} = 301 \text{ dots.}$

l) What is a formula or rule for determining the number of dots in any figure in the pattern? Use the letter  $n$  in your formula to represent the pattern's figure number.

$$\text{Number of Dots in Figure } (n) = 3n + 1$$

3. Complete the patterns below and write a sentence explaining each pattern.

a) 4, 7, 13, 22, 34, 49, 67, 88, 112

Sentence: Add consecutive multiples of 3 each time.

b) 31, 27, 23, 19, 15, 11, 7, 3, -1

Sentence: Subtract 4 each time.

c) \*\*, \$\$, \*\*\*, \$\$\$\$\$, \*\*\*\*, \$\$\$\$\$\$, \*\*\*\*\*, \$\$\$\$\$\$\$\$, \*\*\*\*\*, \$\$\$\$\$\$\$\$

Sentence: Alternate between asterisks and dollar signs. Add 1 more asterick each time and two more dollar signs

d) 14, 11, 16, 13, 18, 15, 20, 17, 22, 19

Sentence: ① Subtract 3 and then add 5 or

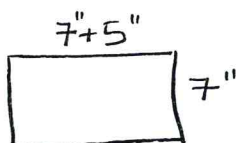
② Every other number increases by 2 each time.

Perimeter:

a) A rhombus has a side that is  $x$  cm. Write an algebraic expression for its perimeter?

$$P = 4x \text{ or } x + x + x + x$$

b) A rectangle has a shorter side that is 7" and a longer side that is 5" longer than the shorter side. What is its perimeter?



$$7 + 5 = 12 \text{ so}$$

$$P = 12 + 12 + 7 + 7 = 38''$$

$$P = 2(7) + 2(12) = 38''$$



Rounding and Place Value:

Round each of the following numbers to the given place value:

- a. 43.245 to the nearest tenths 43.2
- b. 16,209 to the nearest tens 16,210
- c. 389.2 to the nearest hundreds 400
- d. 85.204 to the nearest hundredths 85.20
- e. 22.31 to the nearest ones 22
- f. 975 to the nearest hundreds 1000
- g. 83.2863 to the nearest tenths 83.3
- h. 4.899 to the nearest tens 0

Order the following numbers from smallest to largest.

31.402   3.140   31.4   0.314   3.1402   30   0.31

0.31, 0.314, 3.140, 3.1402, 30, 31.4, 31.402