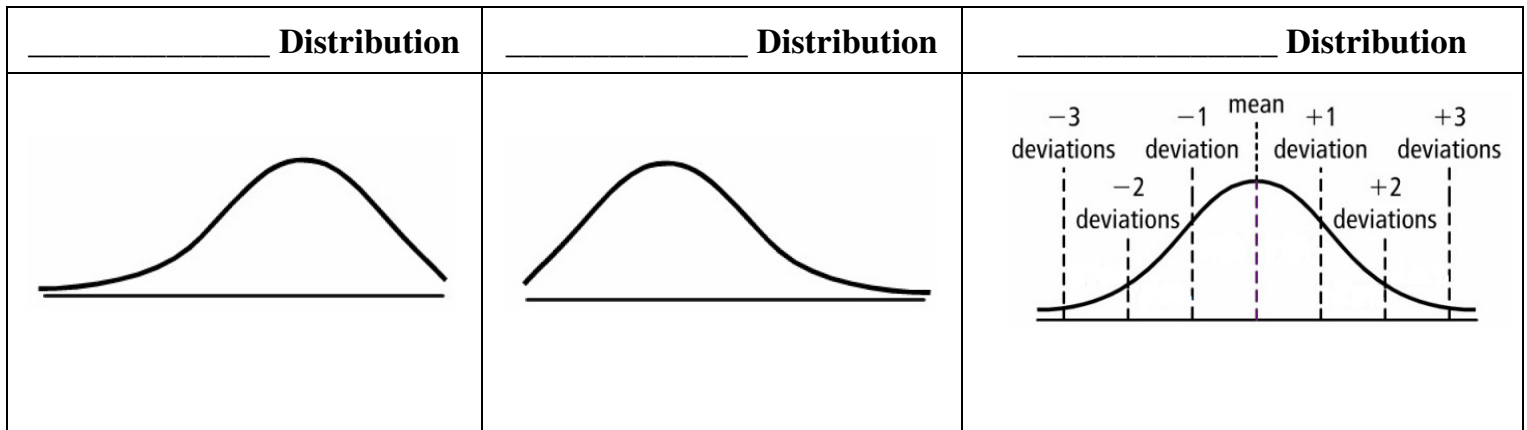


3.4 – The Normal Distribution

– **continuous probability distribution** → occurs when the outcome can be _____

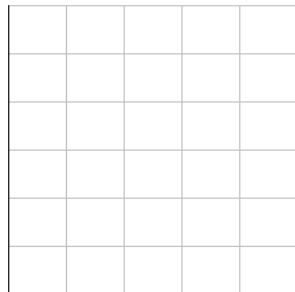
- Never represented by a _____ (bar graph where there are no gaps)
- Always represented by a _____, below are some examples of these...



Example 1: Using the given table, make a histogram. Determine if the type of distribution.
If it's a normal distribution – draw a normal curve with at least 3 standard deviations.

a.)

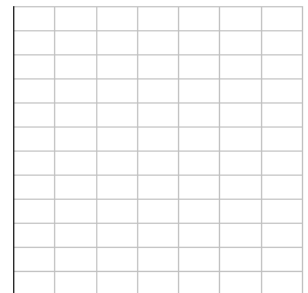
Value	Frequency
22	4
24	5
25	4
27	3
29	2



Type of Distribution: _____

b.)

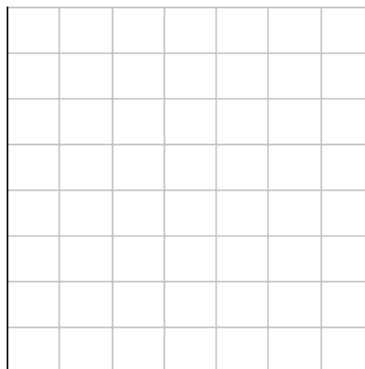
Price	No. Sold
< \$100	0
\$100 – \$120	1
\$121 – \$140	3
\$141 – \$160	7
\$161 – \$180	8
\$181 – \$200	9
> \$200	12



Type of Distribution: _____

c.)

Shoe Size	No. of Students
4	1
5	2
6	4
7	8
8	5
9	3
10	2



Type of Distribution: _____

Example 2: Use the Normal Distribution Curve to complete each problem.

- a.) The shelf-life of a particular dairy product has a mean of 12 days and a standard deviation of 3 days.
- i.) What percent of products last between 3 and 12 days?
 - ii.) What percent of products last between 6 and 21 days?
 - iii.) What percent of products last more than 18 days?
- b.) The scores on a test given to 150 employees have mean of 100 and a standard deviation of 15.
- i.) How many employees scored less than 115?
 - ii.) How many employees scored between 55 and 85?
 - iii.) How many employees scored greater than 130?
- c.) People at a local lake resort prefer the lake to have a specific surface temperature. The lake's temperature is normally distributed with a mean of 82° and a standard deviation of 4.2° .
- i.) If 80 people prefer the temperature to be at least 86.2° , how many people are at the resort?
 - ii.) If 611 people prefer the temperature to be between 77.8° and 90.4° , how many people are at the resort?
 - iii.) If 24 people prefer the temperature to be at most 90.4° how many people are at the resort?
- d.) In a set of test scores that are normally distributed, a test score of 76 is 3 standard deviations below the mean of 85. What percent of people scored between 82 and 94?