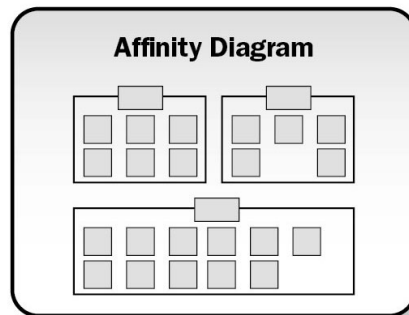## Manage Quality: Tools and Techniques

One of the tools and techniques for the manage quality process is data representation, with six diagrams in total. Let's take a look at each of them.

- [1]**Affinity diagrams** graphically show the details of an idea or potential causes of defects—commonly used in mind mapping.

- [2]**Cause-and-effect diagrams** are also known as fishbone or Ishikawa diagrams. and may be written any of these three ways on the exam. This diagram is used to get to the root cause of a problem, with the main problem being placed at the head of the fish. The question "why?" is asked until the root cause is found. Each fishbone may be a "cause" of the problem.
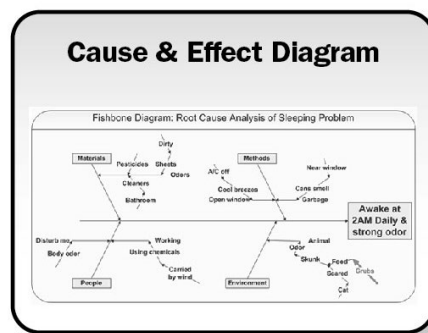

- [2]**Flowcharts,** also known as process maps, are used to show the flow of a process, from start to finish. Creating them helps to identify gaps in a process or steps that may create quality problems.
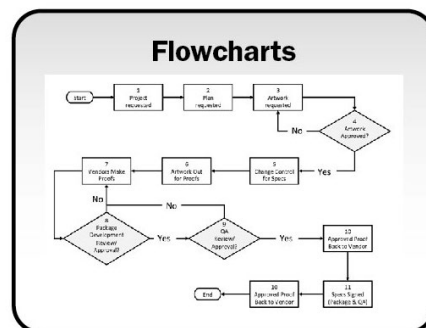
- [2]**Histograms** are bar charts that provide a visual representation of collected data. For example, a histogram may show multiple columns with the number of defects per month for a process.

Histograms
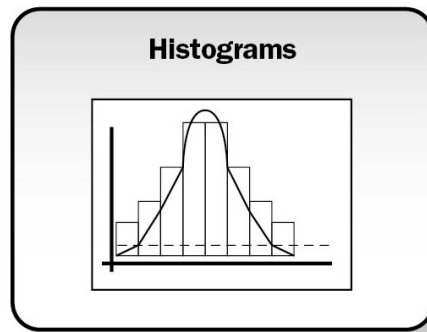
- [3]**Matrix diagrams** seek to show the strength of relationships among factors, causes, and objectives that exist between the rows and columns that form the matrix.

Matrix Diagrams
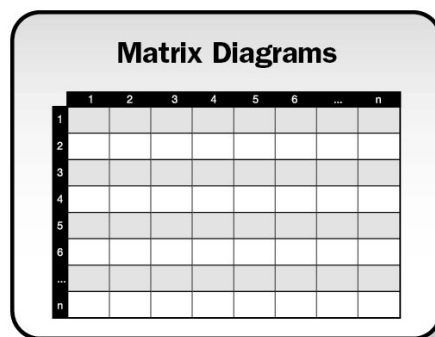
- [2]**Scatter diagrams** are graphical and show the relationship between two variables.

Scatter Diagrams

$R^2 = 73$

Temperature in Degrees Celsius
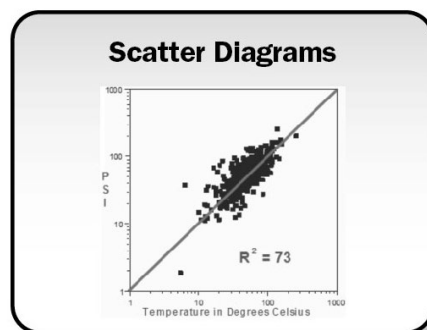
[1]Project Management Institute, *A Guide to the Project Management Body of Knowledge*, (*PMBOK® Guide*) – Fifth Edition, Project Management Institute, Inc., 2013, Figure 8-10, Page 246.

[2]Project Management Institute, *A Guide to the Project Management Body of Knowledge*, (*PMBOK® Guide*) – Fifth Edition, Project Management Institute, Inc., 2013, Figure 8-7, Page 239.

[3]These definitions are taken from the Glossary of Project Management Institute, *A Guide to the Project Management Body of Knowledge*, (*PMBOK® Guide*) – Sixth Edition, Project Management Institute Inc., 2017.