LOGOS

Logos: refers to reasoning or logic. Logos or logical appeals are concerned with showing (or seeming to show) something logical, rational, or reasonable.

RECOGNIZING LOGOS

Examples of Logos include:
Stating statistics
Stating facts
Making conclusions from facts
Discussing causes leading to effects
Discussing methods of science
Discussing methods sounding scientific
Making predictions informed by facts/past events
Using past or parallel situations (resembling the one discussed)
Defining terms
Using Mathematics to a conclusion
Process of elimination
Syllogisms and/or syllogistic reasoning
Enthymemes (or putting forth premises/facts without conclusions)

LOGOS IS MAN-MADE

Using inductive and deductive reasoning, a person using logos may use existing facts to create what appears to be new knowledge or new conclusions.
Example:
Mary is sick. Mary misses school when she is sick. (Two facts)
Thus, Mary will miss school today, because she is sick. (The conclusion deduced from the two facts).

Now, ask yourself the question: Is Mary sick? What if she just decided to stay home? Maybe she had a date or something....

INDUCTIVE REASONING (predicting things or making predictions)

1.1. Predictions

Give a future prediction based on past events. Allows the reader to consider what is probable based on solid evidence?

1.2. Statistics and Generalizations

Statistics are made by questioning or counting the prevalence of certain variables among a smaller population (which is supposed to be representative of a larger population).
However, statistics are subject to error (e.g., a miscount of questions or subjects) and corruption (e.g., a person deliberately skew the results in his/her favor).

Using statistics, especially those collected under positive and controlled circumstances by a reputable company, agency, or institution may be useful in terms of showing trends and values to your audience.

Generalizations are conclusions created from Statistical Samples. Conclusions or claims which are based on statistical samples can provide quite a case.

1.3. Causal Inferences

DEDUCTIVE REASONING (reaffirming existing knowledge or using existing structures to create new knowledge)

2.1. Mathematical Computations or Measurements
Show any applicable Mathematical Computations or Measurements.

Mathematical computations or measurements are usually static (or unchanging). Therefore, when you use a mathematical formula/process, you simply reaffirm it.

2.2. Definitions
Example: John is a bachelor; therefore, John is unmarried.

2.3. Syllogisms or Syllogistic Reasoning
The basic premise to syllogisms is that certain facts may lead to a factual conclusion. Syllogisms are logical structures which use a formulaic method to lead a person to recognize how two propositions (two factual statements) lead to a conclusion (a result).
Example:
Socrates is a man. All men are mortal. Therefore, Socrates is mortal.
Two factual propositions (or statements) relate two things (e.g., “Socrates is a man,” “All men are mortal,”). A conclusion contains an equal sign (therefore) and the deducted conclusion (Socrates is mortal), which ideally is factual and valid (meaning that it makes sense).

2.4. Enthymemes (Formal and Informal)
Similar to syllogisms, enthymemes are essentially two factual premises which allow the audience to 'fill-in' the conclusion, or an enthymeme may even be a conclusion where the premise/premises are generalized or implied.
Example: Socrates is mortal because he's human.

Notice how the enthymeme is a condense version of the syllogism above:

Socrates is a man. All men are mortal. Therefore, Socrates is mortal.
However, notice how you must deduce (or fill-in-the-premise):
Humans are mortal Humans are men.