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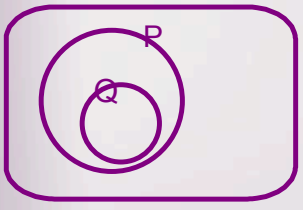
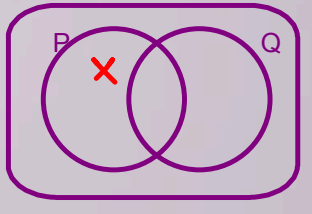


Math 1030 #2a

Analyzing Arguments

Induction and Deduction



Inductive argument ~ Makes a case for a general conclusion from more specific premises

(pattern recognition)

May not be able to prove it is true.

Evaluated in terms of its strength.
An inductive argument is strong if it makes a compelling case for the conclusion.
An inductive argument is weak if the conclusion is not supported by the premises.
The strength of an inductive argument is subjective.

EX 1: Evaluate these inductive arguments.

a) p: If I pay more for running shoes, they last longer.
p: If I pay more for my car, it requires fewer repairs.

c: Quality comes with higher prices

weak argument

b) p: Bach, Beethoven, Brahms, Berlioz and Britten are great composers.

c: Composers with names that begin with B are great.

weak argument

c) p: My friend, the dog-trainer, has five female dogs who are all pregnant.

c: All female dogs are pregnant.

not true
(weak argument)

Deductive argument ~ Makes a case for a specific conclusion based on more general premises

valid : conclusion follows from premises.

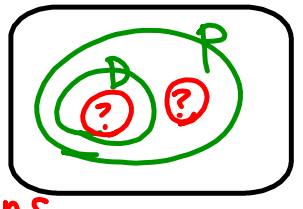
sound : valid and premises are true.

* Sound arguments prove the conclusion is true.

EX 2: Evaluate these deductive arguments.

a) P: All dairy products contain protein.
P: Soy beans contain protein.

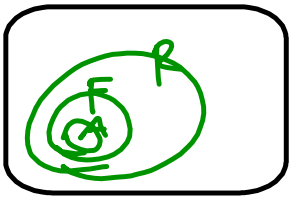
C: Soy beans are dairy products.



Let D = dairy products S = soybeans
P = protein ⇒ conclusion is invalid

b) P: All fruits are fat free.
P: An avocado is a fruit.

C: Avocados are fat free.



let F = fruits
R = fat free
A = avocados

true: the conclusion follows from premises
⇒ valid

⇒ not sound