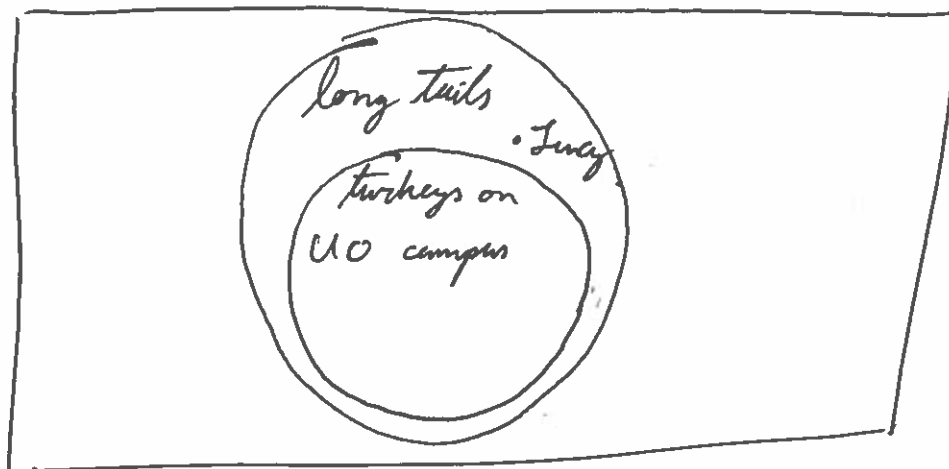**Lecture Examples**

Ex 1 Set up a Venn Diagram to illustrate either the validity or invalidity of the following argument:

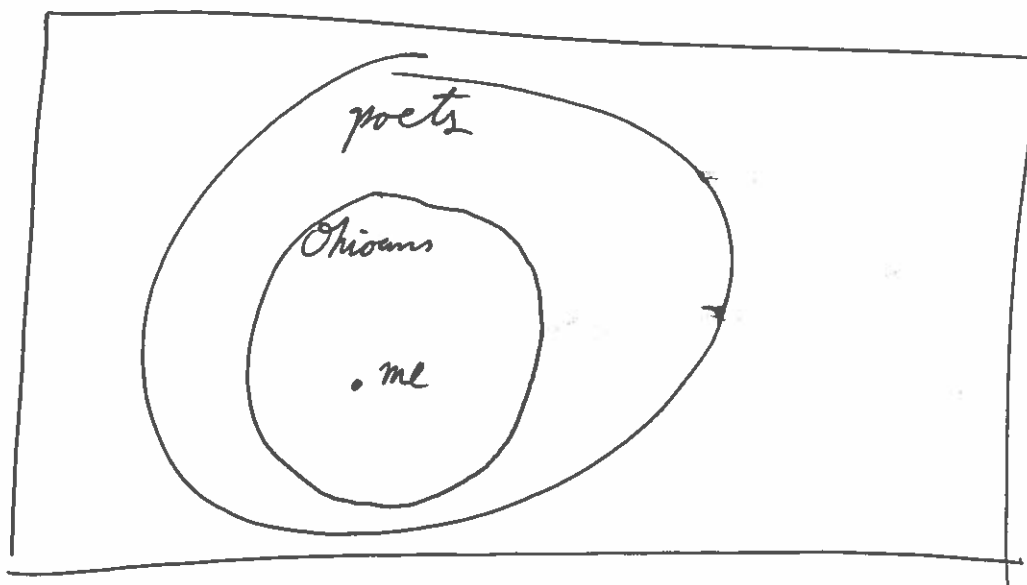1. All turkeys on the UO campus have long tails.
2. Lucy has a long tail.

∴ Therefore, Lucy is a turkey on the UO campus.

Ex 2 Set up a Venn Diagram to illustrate either the validity or invalidity of the following argument:

1. All Ohioans are poets.
2. I am an Ohioan.

∴ Therefore, I am a poet.

On-Your-Own Examples

Deductive Versus Inductive Reasoning: Determine if the following arguments use deductive reasoning or inductive reasoning.

Ex 1 Every time clouds form over Eugene, it rains. It's cloudy today, so I'll wear my raincoat.

Deductive

Ex 2 It was sunny yesterday, so it will be sunny every day.

Inductive

Ex 3 I tried brussel sprouts twice and I didn't like them, so I must not like brussel sprouts.

Inductive

Ex 4 All newspapers have cartoons, so the Daily Emerald has cartoons.

Deductive

Ex 5 A sequence begins with $1, 2, 4, \ldots,$ *etc.* Since each number in the sequence is double the number before it, the next number in the sequence must be 8.

Inductive

Ex 6 All known planets travel about the sun in elliptical orbits. Therefore, all planets travel about the sun in elliptical orbits.
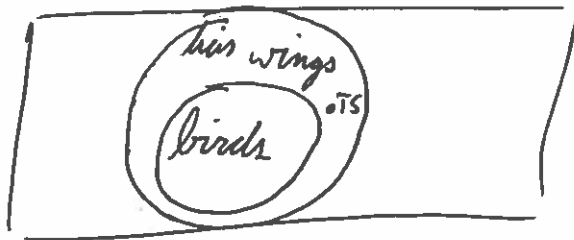
Inductive

Ex 7 Since all squares are rectangles and all rectangles have four sides, all squares have four sides.

Deductive

Determining Validity: Determine if each of the following arguments is valid or invalid. Use a Venn Diagram to support your work.
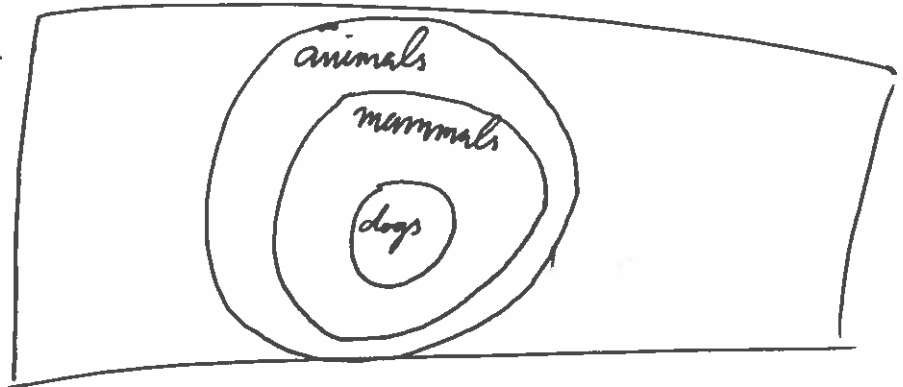
Ex 1 All birds have wings.
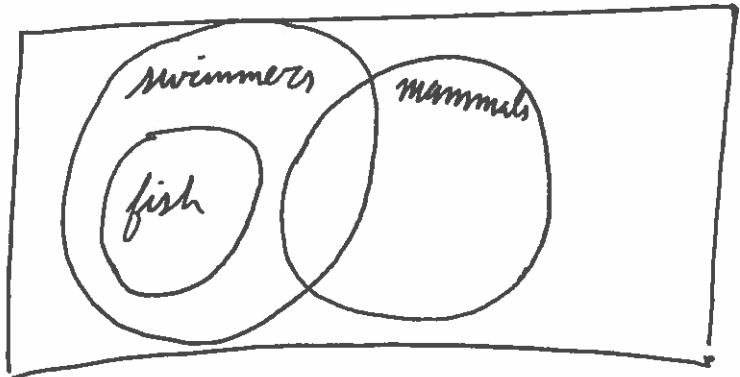Toucan Sam has wings.
Therefore, Toucan Sam is a bird.

Invalid

Ex 2 All mammals are animals.
All dogs are mammals.
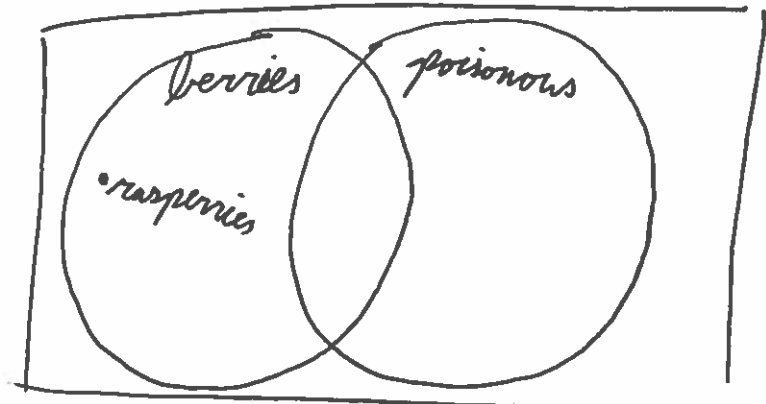Therefore, all dogs are animals.

Valid

Ex 3 All fish are swimmers.
No mammals are fish.
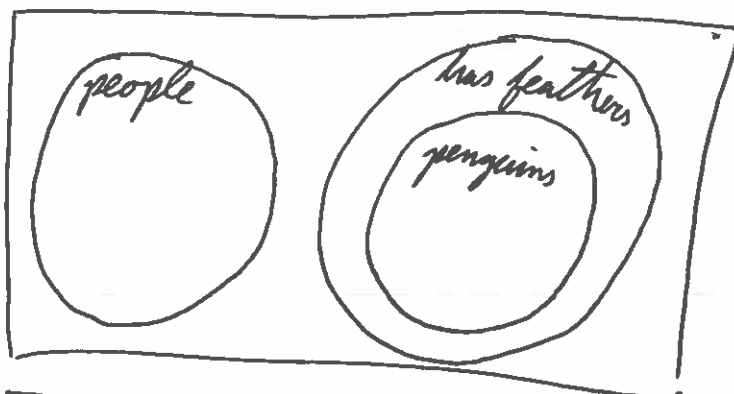Therefore, no mammals are swimmers.

Invalid

Ex 4 Some berries are poisonous.
Raspberries are berries.
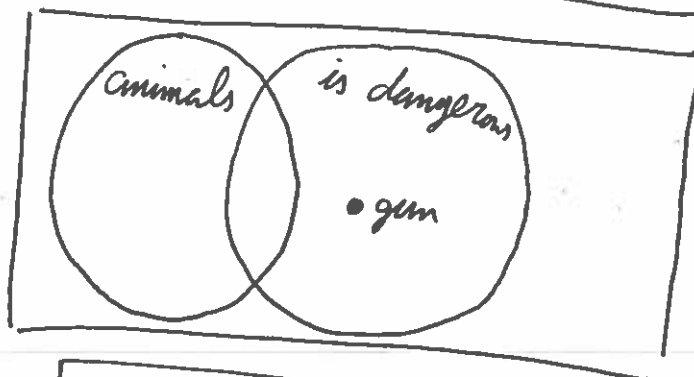Therefore, raspberries are poisonous.

Invalid

Ex 5 No people have feathers.
All penguins have feathers.
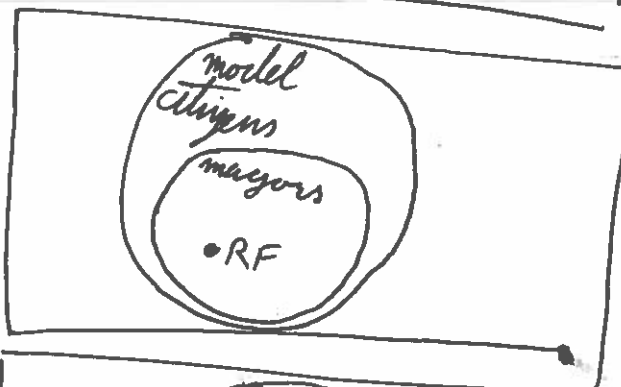Therefore, people are not penguins.

valid

Ex 6 Some animals are dangerous.
A gun is not an animal.
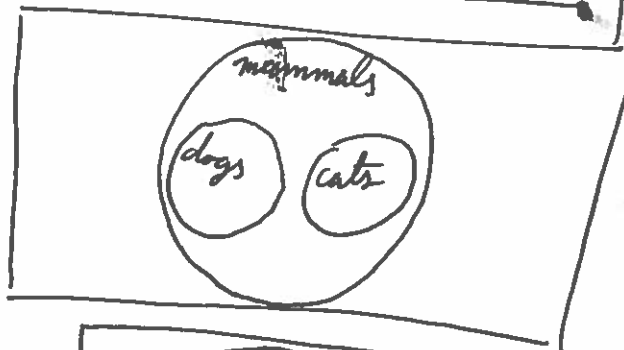Therefore, a gun is not dangerous.

Invalid

Ex 7 All mayors are model citizens.
Rob Ford is the mayor of Toronto.
Therefore, Rob Ford is a model citizen.

Valid

Ex 8 All dogs are mammals.
All cats are mammals.
Therefore, all cats are dogs.

Invalid

Ex 9 Some contractors are electricians.
All contractors are carpenters.
Therefore, some electricians are carpenters.

Valid