

**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.

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$\therefore$  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.

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$\therefore$  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.

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

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

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

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

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

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

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.

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

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

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

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

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

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

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

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