2.2

INDUCTIVE REASONING

Objectives:

To introduce and familiarize inductive reasoning patterns

Inductive reasoning

The process of _____ data, recognizing _____, and making _____ from observations

Conjecture

A _____ made using inductive reasoning

Inductive reasoning is a type a reasoning that we all use. It is one of first ways that we start thinking about things.

1.

2.

3.

A scientist takes a piece of salt, turns it over a burning candle, and observes that it burns with a yellow flame. She does this with many other pieces of salt, finding they all burn with a yellow flame.

Jason is new to the US. He arrives at the airport. He notices that almost all of the people in the airport have black hair. He then conjectures that everybody in the US must have black hair.

Demetria is working on a math problem in class. She has a question and yells across the room for her teacher and snaps her fingers to get his attention. The teacher does not come to answer her question. She next raises her hand to get her teachers' attention and he comes right over to help her. Demetria conjectures that……..

Lisa notices that most adults have jobs. She meets a person named Chuck, and he has a job. She then conjectures…

Is this argument valid? Why or why not?

USE INDUCTIVE REASONING TO DERIVE A CONJECTURE FROM THE FOLLOWING STATEMENTS.

"My sisters dog is a boxer. My best friend's dog is a boxer."

A. Dogs are animals.
B. All dogs are boxers.
C. A boxer is a type of dog.
D. My sister is my best friend.

IS THE STATEMENT TRUE? IF NOT, COME UP WITH A COUNTEREXAMPLE.

“If it is Sunday, then you are going to school tomorrow.”

“If there is gas in my car, then I can get to work.”

“If I get an “A” on the test, then I will get an “A” in the class.”

2, 4, 7, 11, ____, ____

Do you see a pattern here?

Starting with two, terms increase by 2, then 3, then 4

What are the next two numbers in this sequence?

1, -2, 4, -8, ____, ____

What pattern do you see here?

Starting with one, multiply previous number by -2 to get the next number.

What are the next two numbers in this sequence?

FIND THE NEXT TWO NUMBERS IN THE SEQUENCE.

100, 120, 140, 160, _____, _____

1, -3, 9, -27, 81, _____, _____

1, 2, 4, 7, 11, 16, _____, _____

1, 3, 7, 13, 21, 31, _____, _____

FIND THE NEXT TWO NUMBERS IN THE SEQUENCE.

1/3, 1/6, 1/12, 1/24, 1/48 ,_____,_____

1/6, 1/3, 1/2, 2/3, 5/6, 1,_____,_____

2, -6, 18, -54, 162 ,_____,_____

DRAW THE NEXT IN EACH PICTURE DRAWING

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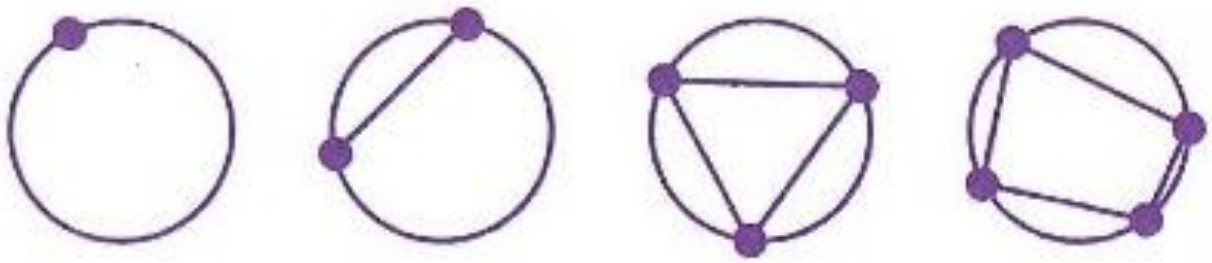

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