

Inductive Reasoning

INDUCTIVE REASONING: _____

CONJECTURE: _____

Example 1: Give the next two terms in the sequence.

1. 2, 4, 8, 16, ...

2. 18, 9, 0, -9, ...

3. 6, 8, 12, 18, ...

4. 3, -4, -11, -18, ...

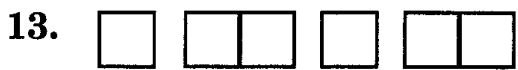
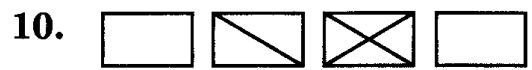
5. -11, -6, -1, 4, ...

6. 9, 10, 13, 18, ...

7. 1, 7, 19, 37, ...

8. 14, 15, 17, 20, ...

Example 2: Give the next figure in each pattern.



You Try: Give the next two terms in the sequence.

3, 6, 12, 24, ...

384, 192, 96, 48, ...

Monday, Tuesday, Wednesday, ...

O, T, T, F, F, S, S, E, ...

Deductive Reasoning

DEDUCTIVE REASONING: _____

There are 2 laws of deductive reasoning:

LAW OF DETACHMENT:

If $p \rightarrow q$ is a true conditional statement and p is true, then q is true.

Example 1:

If you break an item in a store, you must pay for it.

Jill broke and vase in Potter's Gift Shop.

Conclusion is: Jill must pay for the vase.

Example 2:

Angles that are complementary have measures with a sum of 90.

$\angle A$ and $\angle B$ are complementary.

Conclusion is: _____

Example 3:

If a dog eats Dogfood Delights, then the dog is happy.

Fido is a happy dog.

Conclusion is: _____

LAW OF SYLLOGISM:

If $p \rightarrow q$ and $q \rightarrow r$ are true conditionals, then $p \rightarrow r$ is also true.

Example 1:

If you eat vegetables, then you are a less risk for some cancers.

If you are at less risk for some cancers, you will probably live longer.

Conclusion is: If you eat vegetables, you will probably live longer.

Example 2:

If people live in Manhattan, then they live in New York.

If people live in New York, then they live in the United States.

Conclusion is: _____

Example 3:

If you have a job, then you have an income.

If you have an income, then you must pay taxes.

Conclusion is: _____