

INDUCTIVE REASONING

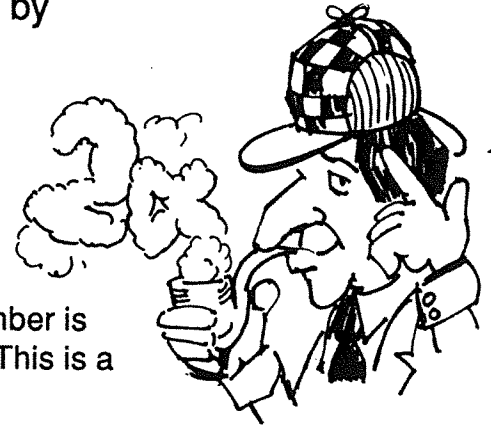
You use *inductive reasoning* if you reach a conclusion by making particular observations.

Example:

If a number is divisible by 4, is it divisible by 2?

Examine some cases: 44, 60, 72, 36

Based on these cases, you should say, "Yes!" In fact, if the number is divisible by 4, then the ones digit is even (divisible by 2). Note: This is a conjecture only, not a proof!



For each statement below, examine five cases. Make a conjecture of "yes" or "no."

1. If a number is divisible by 2 and 5, is it divisible by 7?
2. If a number is divisible by 8, is it divisible by 4?
3. If a number is divisible by 10, is it divisible by 5?
4. If a number is divisible by 3, is it divisible by 9?
5. If a number is divisible by 2 and 4, is it divisible by 8?
6. If a number is divisible by 2 and 4, is it divisible by 6?
7. If a number is divisible by 2 and 8, is it divisible by 16?
8. If a number is divisible by 4 and 8, is it divisible by 12?
9. If a number is divisible by 3 and 4, is it divisible by 12?
10. If a number is divisible by 5 and 3, is it divisible by 15?
11. If a number is divisible by 9 and 2, is it divisible by 11?
12. If a number is divisible by 9 and 2, is it divisible by 18?
13. If a number is divisible by 2 and 7, is it divisible by 9?
14. If a number is divisible by 2 and 7, is it divisible by 14?
15. If a number is divisible by 3 and 6, is it divisible by 18?

Yes/No

VENN DIAGRAMS

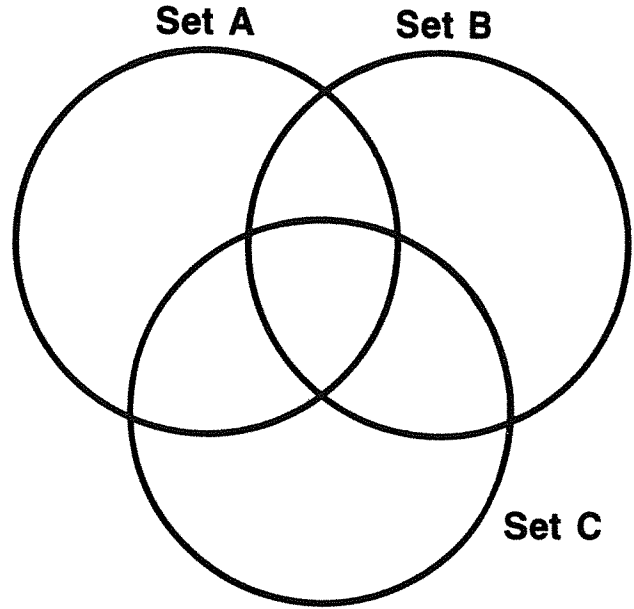


Use the given information to place numbers in the Venn diagram. Answer the questions and write the numbers where they belong.

Set A represents even numbers less than 40.

Set B represents prime numbers less than 40.

Set C represents odd numbers less than 30.



1. Where does 17 belong in this diagram? _____

2. Where does 36 belong in this diagram? _____

3. The number 2 belongs to set _____ and set _____.
4. Where does 37 belong in this diagram? _____

5. The number 28 belongs to set _____.
6. Where does 27 belong? _____
7. Where does 23 belong? _____
8. Where does 6 belong? _____
9. What is the least number that is a member of set A only? _____
10. What number belongs in the space that sets A, B, and C have in common?

11. What is the greatest number that is an element of set B only? _____
12. What is the least number that belongs to both sets B and C? _____