

## CHAPTER 1

# LOGIC PROBLEM SOLVING

Can you apply a **deductive thinking** ?

- ✓ Only fish oil contains Omega 3
- ✓ Only foods that contain Omega 3 help with brain development.

Which conclusion can be derived from these 2 statements?

**A** - All fish oils help with brain development

.

**B** - Only what contains Omega 3 is fish oil.

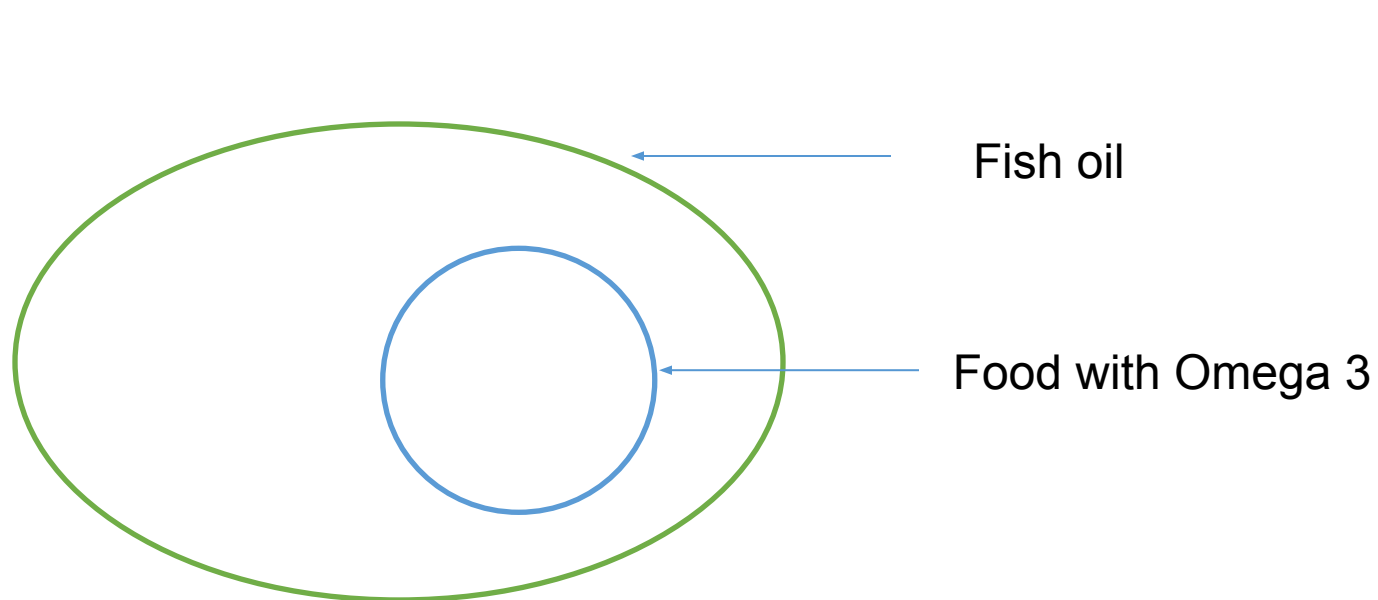
**C** - All that helps with brain development is fish oil

.

**D** - There are fish oils that help with brain development.

Can you apply a **deductive thinking** ?

- ✓ Only fish oil contains Omega 3
- ✓ Only foods that contain Omega 3 help with brain development.



~~- All fish oils help with brain development~~

*Not all fish oil contains Omega3 !!*

# Think Before You Start Doing

## 1 - UNDERSTAND



Read the problem  
carefully

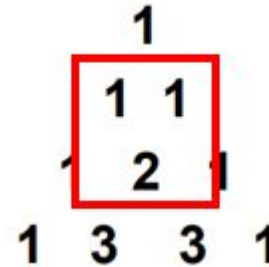


Draw  
diagrams

## 2 - CREATE A STRATEGY



Question  
everything



interpret  
repetitive  
patterns.



Lok for details

mistake  
+  
correction  
=  
learning

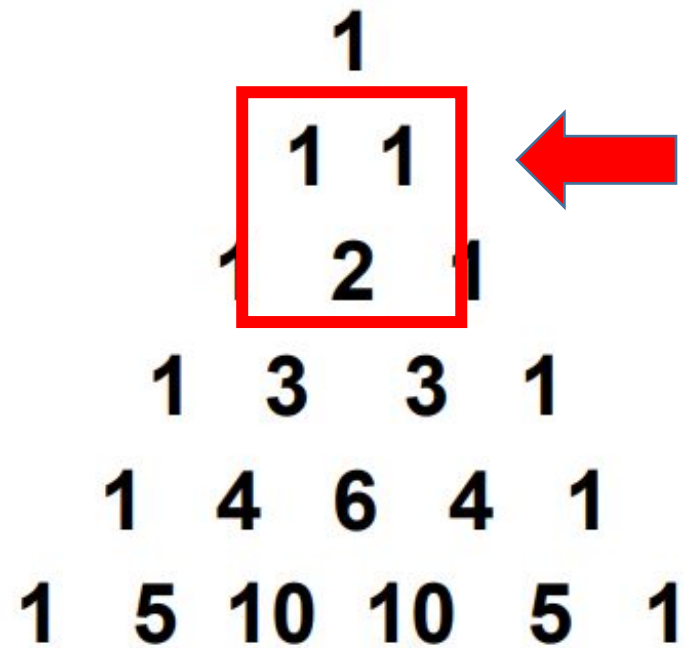
Learn from  
mistakes

Example : “Find the next line in the sequence”

A Pascal's Triangle diagram with six rows of numbers. The numbers are arranged in a symmetric, triangular shape. The first row has one number (1). The second row has two numbers (1, 1). The third row has three numbers (1, 2, 1). The fourth row has four numbers (1, 3, 3, 1). The fifth row has five numbers (1, 4, 6, 4, 1). The sixth row has six numbers (1, 5, 10, 10, 5, 1). Each number is the sum of the two numbers directly above it.

1					
1	1				
1	2	1			
1	3	3	1		
1	4	6	4	1	
1	5	10	10	5	1

Step 1 : we find the pattern

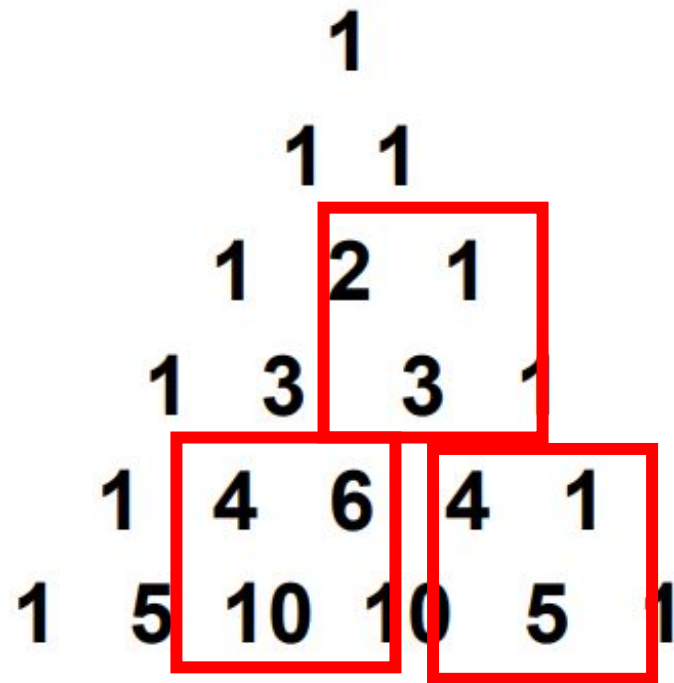


Step 2 : we draw some diagram to understand



*It look like the two dots are the sum of two ones.*

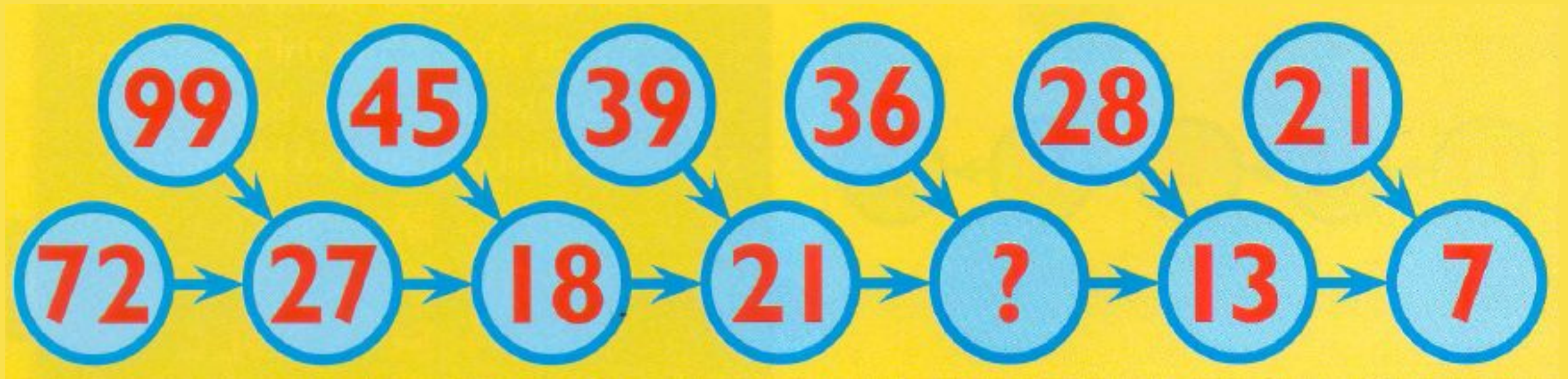
Step 3 : we check our idea work everywhere



YES !

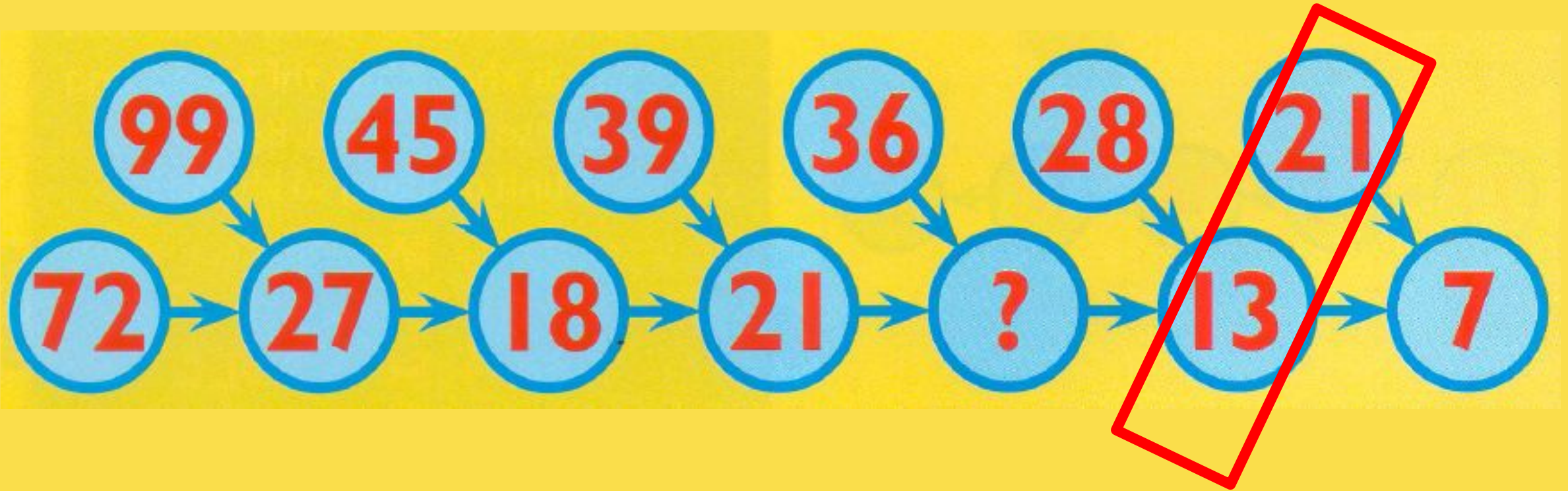


Apply this process to find the  
**missing number**



We found a pattern.... Then we check if it works everywhere

$$2 + 1 + 1 + 3 = 7$$





15 MIN



# ACTIVITY

# Triangles



15 MIN



## ACTIVITY

# Tower of Hanoi

<https://www.mathsisfun.com/games/towerofhanoi.html>



15 MIN



## ACTIVITY

# Zebra puzzle

- Start by reading all the clues
- Find all the "basic" clues and mark them.  
*Example: The German lives in house three.*
- Deduce some information using two or more clues;

<https://www.brainzilla.com/logic/zebra/einsteins-riddle/>



# THE GARDEN

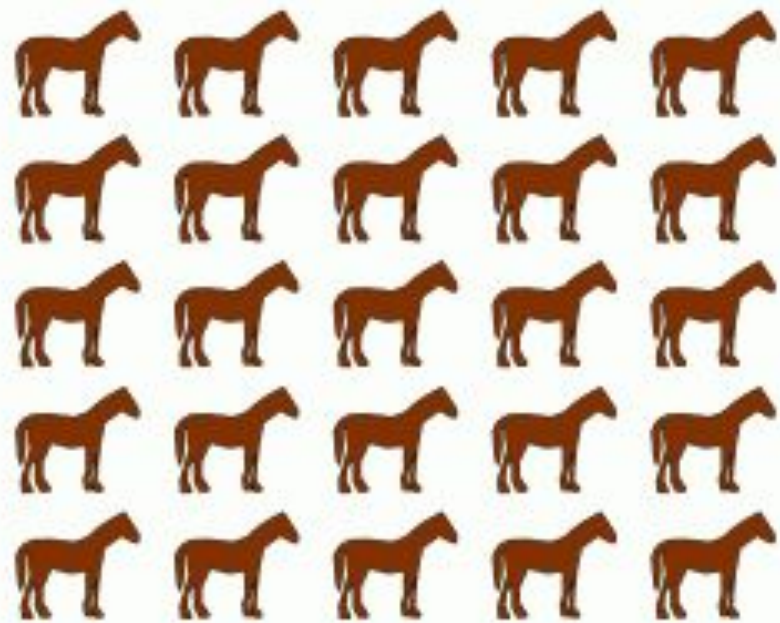
*ZEBRA PUZZLES*





# Can You Solve The 25 Horses Puzzle?

## Google Interview Question



There are 25 horses. What is the minimum number of races needed so you can identify the fastest 3 horses? You can race up to 5 horses at a time, but you do not have a watch.



## Find out everyone's **full name**

Four children (Ann, Sam, Henry, Kendra) have different last names (Smith, Jones, Gonzales, Lee).

*Use the following clue to help you figure this out:*

- a. Ann's last name does not have a "z" in it.
- b. Sam's last name does not end with an "s".
- c. Henry's last name has 5 letters in it.
- d. Sam's last name is not the shortest one here.