



Introduction:

Patterns are everywhere. We learn to observe and recognize them. A pattern is a repeating sequence of things. We can see patterns in numbers, in designs, in animal or human behaviour, in nature. Patterns help us to simplify complex ideas, help us to predict behaviour and influence our occupations or businesses. E.g., a farmer's activities depend on weather patterns, customers' buying patterns decide what a shopkeeper will stock in his shop, and demand and supply patterns decides the prices of goods. Templates can be made from patterns and used in printing, or manufacturing. Sometimes, a pattern can be divided into two such that the two parts of the pattern are mirror images of each other. Such a pattern is called 'symmetric'. Other patterns are 'asymmetric'.

Questions: (* questions can be used for evaluation)

Questions 1: What is the missing item in the list?

- a. 3, 6, 9, ____, 15, 18
- b. aab, bbc, ccd, dde, ____, ffg
- c. 1, 2, 2, 4, 8, 32, ____
- d. 5, 7, 9, ____, 13, 15
- e. 8, ____, 24, 32, 40

Questions 2: Identify the rhyming pattern in the following:

a. Scatty Sue

In house number five, lived little Scatty Sue
Her shoes were always dirty, her socks never matched
Her pencils went a-missing, her notes were always scratched
And her homework, oh dear, it was always overdue!

b. Man

As a rule, man is a fool
When it's hot he wants it cool
When it's cool he wants it hot
Always wanting what is not!

c. Father William

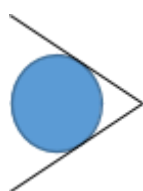
"You are old, Father William," the young man said,
"And your hair has become very white;
And yet you incessantly stand on your head--
Do you think, at your age, it is right?"

Questions 3: Circle the 'odd man out' in each list.

- Cloud, steam, mist, vapour, hydrogen
- Pink, white, green, coal, yellow, red
- Dilip, Anita, Ajay, Sunil, Kartik
- 3, 7, 9, 11, 12, 13
- Piano, mouth organ, pumpkin, drum, violin, guitar
- Silk, nylon, cotton, wool, paper

Questions 4: Can you draw the missing half of the following symmetric patterns?

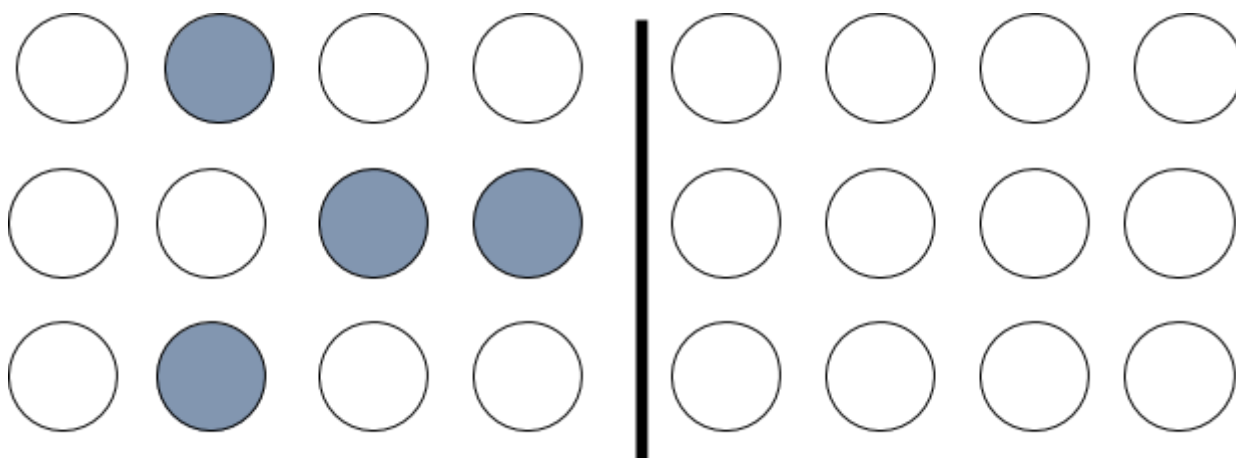
a)



b)



c)



Name:

Class:

Div:

Roll. No:



Questions 5:

1. Can you extend the 'mirror image' idea of symmetric patterns to numbers and letters? First observe the examples. In each problem draw the mirror line and then solve.

e.g., aabbaa is a symmetric pattern because "aab" is the mirror image of "baa". Similarly, 122321123221 is symmetric. If you read 122321 from left to right and you read 123221 from right to left you get the same sequence.

Hint: The mirror line in a symmetric sequence will be after exactly half the characters. E.g. aabbaa has 6 letters and the mirror line comes after the 3rd letter – i.e., after "aab"

- a. Fill in the right side to make a symmetric sequence

Hello_____

- b. Fill in the blanks to make a symmetric sequence

opopopq____p__o

- c. Fill in the blanks to make a symmetric sequence

wa~~m**_____