Explaining resulting patterns

6 practice questions

1. A constant-step pattern is $3, 7, 11$. Explain the rule and give the next number.

$7 - 3 = 4$; $11 - 7 = 4$; $11 + 4 = 15$.

Answer: Add 4 each time; next is 15.

2. Start at 24 and subtract 5 each time. Explain the next 3 numbers.

$24 - 5 = 19$; $19 - 5 = 14$; $14 - 5 = 9$.

Answer: $19, 14, 9$.

3. A pattern starts at 2 and doubles. A child writes $2, 4, 6, 8$. Explain the mistake.

Double 4 is 8; double 8 is 16.

Answer: The child added 2 instead of doubling. It should be $2, 4, 8, 16$.

4. Separate tables each seat 4 children. Explain the totals for $1, 2$ and 3 tables.

$1 \times 4 = 4$, $2 \times 4 = 8$, $3 \times 4 = 12$.

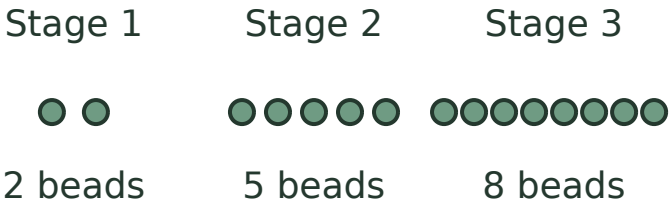
Answer: $4, 8$ and 12 seats. Each extra table adds 4 seats.

5. The constant-step sequence is $1, 6, 11, __$. A child says 17. Explain and correct it.

Each shown step adds 5. $11 + 5 = 16$, not 17.

Answer: The next number is 16.

6. Explain how you know stage 4 of this bead pattern has 11 beads.



Check $5 - 2 = 3$ and $8 - 5 = 3$, then add another 3.

Answer: The stages have $2, 5$ and 8 beads, adding 3 each time. Stage 4 has $8 + 3 = 11$.