**Investigation – Sequences across the world**

**Q1.** The first number in a sequence of numbers is

5

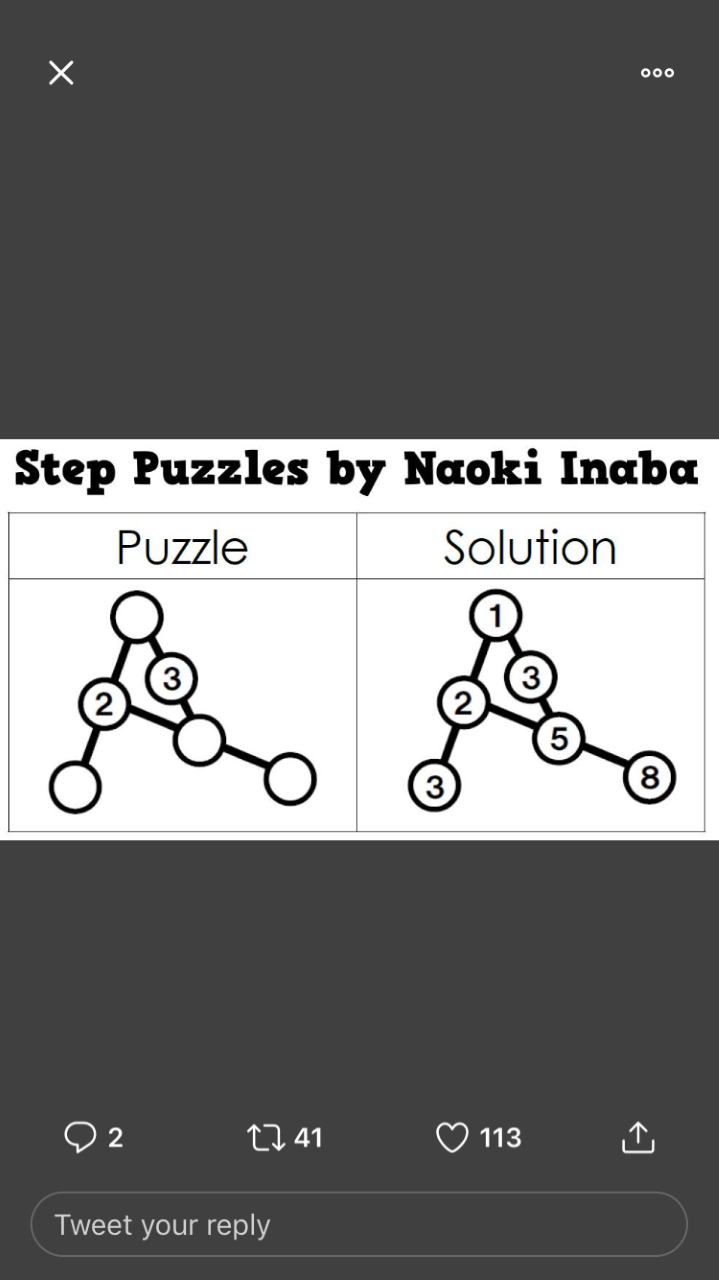
Think of five different rules to continue the sequence, and write down what comes next and what the rule for the sequence is.

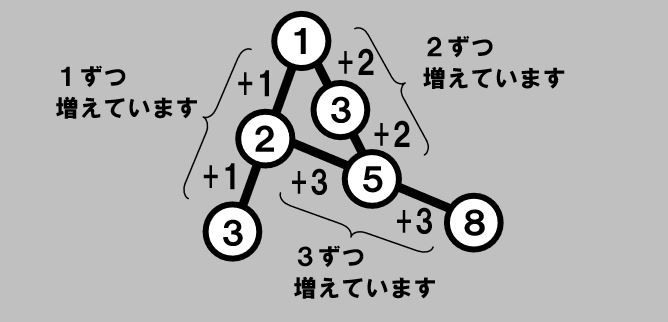
For example: 5, 7, 9, the rule is add two.

Think about rules that involve adding, subtracting, multiplying, dividing and combinations of these.

|  |  |
| --- | --- |
| Sequence | Rule |
| 5 |  |
| 5 |  |
| 5 |  |
| 5 |  |
| 5 |  |

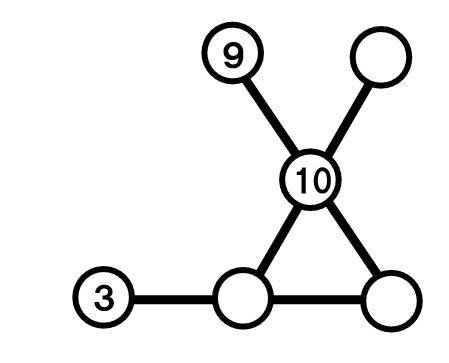
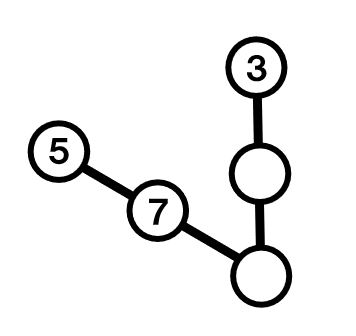
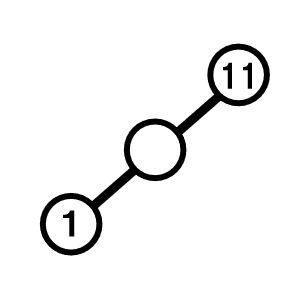
**Q2**. In Japan, maths puzzles are very popular. These puzzles are written for Japanese newspapers.

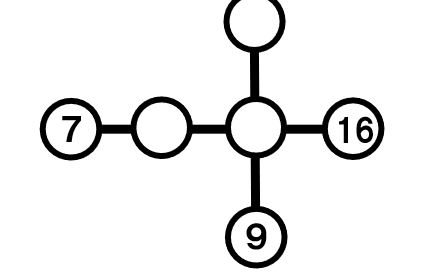
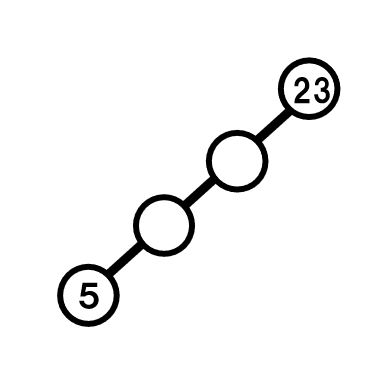
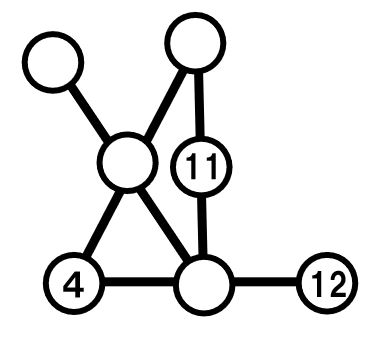




In each line of numbers, they go up the same amount each time.

Try to solve these puzzles:





**Q3**. The third number in a sequence is 13. The sequence goes up by the same amount each time.

What could the sequence be?

Example: The sequence could be 3, 8, 13,18. The sequence starts at 3 and goes up by 5.

Give 5 possibilities for what the sequence could be.

|  |  |  |
| --- | --- | --- |
| Sequence | Starts at | Goes up in |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

What do you notice about the number that it starts at and the number it goes up in? It might help to work systematically here – where could the sequence start? What does it have to go up in?

Investigate and explain.