

Indian Math Online – Solution Explanation Patterns

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Examples:

Q.1. Find the next three terms in the following pattern

1, 1, 2, 3, 5, ____, ____, ____

Explanation: Observe the pattern. The first number is 1.

The next number is found by adding the previous two numbers. Since the 2nd number has only one number before, it is $1 + 0 = 1$

The 3rd number is $1 + 1 = 2$

The 4th number is $1 + 2 = 3$

The 5th number is $2 + 3 = 5$

So, the next numbers are $3 + 5 = 8$

And, $5 + 8 = 13$

And, $8 + 13 = 21$

So, the answer is **8, 13, and 21.**

Q.2. Study the pattern and fill in the missing numbers:

210, 200, 191, 183, ____, ____

Explanation: Observe the pattern: $210 - 200 = 10$

$$200 - 191 = 9$$

$$191 - 183 = 8$$

So, the next number should be 7 less than 183 i.e. $183 - 7 = 176$

The next number should be 6 less than 176 i.e. $176 - 6 = 170$

So, the next two numbers are **176, 170.**

Q.3. Fill in the blanks to complete the series

100, 121, 144, ____, ____

Explanation: Observe that the first number is $10 \times 10 = 100$

The 2nd number is $11 \times 11 = 121$

The 3rd number is $12 \times 12 = 144$

So, the next numbers will be $13 \times 13 = 169$ and $14 \times 14 = 196$

The answer is **169, 196.**

Q.4. Find the next three terms in the following pattern

1, 2, 4, 7, ____, ____, ____

Explanation: Observe the pattern; the difference between two consecutive numbers is increasing by one.

The 1st number is 1

The 2nd number is $1 + 1 = 2$

The 3rd number is $2 + 2 = 4$

The 4th number is $4 + 3 = 7$

So, the next numbers are $7 + 4 = 11$

$$11 + 5 = 16$$

$$16 + 6 = 22$$

The answer is 11, 16, and 22.

Q.5. Find the next two numbers to complete the pattern

12, 24, 48, ____, ____

Explanation: Observe that each number is double the previous number.

The 1st number is 12

The 2nd number is $12 \times 2 = 24$

The 3rd number is $24 \times 2 = 48$

So, the next numbers will be $48 \times 2 = 96$

$$96 \times 2 = 192$$

So, the answer is 96, 192.

Q.6. Find the next two numbers to complete the pattern

10, 200, 4000, ____, ____

Explanation: Observe that from the second number each number is found by multiplying the previous number by 20.

$$10 \times 20 = 200$$

$$200 \times 20 = 4000$$

So, the next two numbers are $4000 \times 20 = 80000$

$$80000 \times 20 = 1600000$$

The answer is 80000, 1600000.

Q.7. Fill in the blanks to continue the pattern

34, 45, 56, 45, 56, 67, 56, _____, _____

Explanation: Start from 34 and the next numbers are obtained as:

$$34 + 11 = 45 \text{ and } 45 + 11 = 56$$

34, 45, 56 form one set.

The next number is the middle number of the previous set.

Start from 45 and the next numbers are obtained as:

$$45 + 11 = 56 \text{ and } 56 + 11 = 67$$

45, 56, 67 form the second set.

The next set starts from the middle number of the previous set.

Start from 56 and the next two numbers are $56 + 11 = 67$

$$67 + 11 = 78$$

So, the answer is 67, 78.

Q.8. Find the number which does not fit into the following pattern:

4, 6, 8, 9, 10, 12

Explanation: Observe that all the numbers differ by 2 numbers except for 9 which differs by 1.

$$4 + 2 = 6$$

$$6 + 2 = 8$$

$$8 + 1 = 9$$

$$8 + 2 = 10$$

$$10 + 2 = 12$$

So, 9 is the number which does not fit into the given pattern.

Q.9. Fill in the blanks to continue the pattern:

74,287; _____, _____; 77,287; 78,287

Explanation: Find the difference between the last two numbers, it is 1,000.

So, we should add 1,000 to the first number to obtain the next number.

The second and third numbers are:

$$74,287 + 1,000 = 75,287$$

$$75,287 + 1,000 = 76,287$$

Also, observe that $76,287 + 1,000 = 77,287$ (given in the series)

So, the answer is 75,287; 76,287

Q.10. Fill in the blanks to complete the series:

38,600; 36,800; _____; _____; 31,400

Explanation: Find the difference between the first two numbers

$$38,600 - 36,800 = 1,800$$

To obtain the next number subtract 1,800 from 36,800.

$$36,800 - 1,800 = 35,000$$

$$35,000 - 1,800 = 33,200$$

Also check $33,200 - 1,800 = 31,400$

So, the answer is **35,000; 33,200.**

Q.11. Fill in the blanks to complete the series

12,000; 12,010; 12,030; 12,060; _____; _____

Explanation: Start from 12,000 and add 10, 20, 30,to the previous number to obtain the next number.

$$12,000 + 10 = 12,010$$

$$12,010 + 20 = 12,030$$

$$12,030 + 30 = 12,060$$

So, the next numbers are $12,060 + 40 = 12,100$

$$12,100 + 50 = 12,150$$

The answer is **12,100; 12,150.**

Q.12. Fill in the blanks to continue the series:

950; 1,900; 2,850; _____; _____

Explanation: Observe the pattern: 950 is being added to obtain the next number.

$$950 + 950 = 1,900$$

$$1,900 + 950 = 2,850$$

So, the next numbers are $2,850 + 950 = 3,800$

$$3,800 + 950 = 4,750$$

The answer is **3800, 4750.**