

1 . Answer: B

Explanation: The given number sequence is a recursive sequence which means that the terms are defined or obtained based on the previous terms. Specifically, the next term of the sequence can be obtained by multiplying the two previous terms.

$$1 \times 2 = 2$$

$$2 \times 2 = 4$$

$$2 \times 4 = 8$$

$$4 \times 8 = 32$$

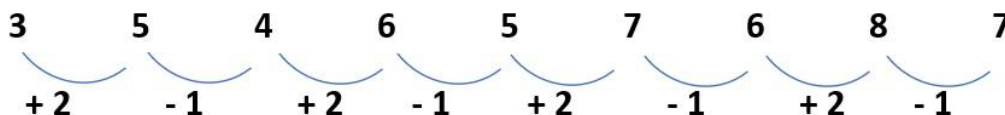
Thus, the next term can be obtained by multiplying 32 and 8:

$$8 \times 32 = 256$$

2. Answer: B

Explanation:

Shown below is the pattern of the sequence:



The pattern of the sequence is that the first number was added with 2 then the result was reduced by 1. Adding 2 and subtracting 1 is done alternately for the rest of the sequence.

Thus, to obtain the next number, we should add 2 to 7.

$$7 + 2 = 9$$

3. Answer: D

Explanation: The number sequence is an example of a Geometric Sequence, which means that the next term of the sequence is obtained by multiplying the same number in the sequence by the same number.

Specifically, in this sequence, 5 is constantly multiplied to the previous terms to obtain the next terms.

Thus, to obtain the next term after 12.5, we simply multiply 12.5 by 5:

$$12.5 \times 5 = 62.5$$

4. Answer: D

Explanation: The sequence just provides the square (multiplying the number by itself) of the whole numbers from 2 onwards. That is:

$$2^2 = 2 \times 2 = 4$$

$$3^2 = 3 \times 3 = 9$$

$$4^2 = 4 \times 4 = 16$$

$$5^2 = 5 \times 5 = 25$$

Thus, we need to get the square of 6 to obtain the next term.

$$6^2 = 6 \times 6 = 36$$

5. Answer: A

Explanation:

Shown below is the pattern of the given sequence:

$$\begin{array}{cccccc} 82 & 77 & 80 & 75 & 78 & 73 \\ \text{---} & \text{---} & \text{---} & \text{---} & \text{---} & \\ -5 & +3 & -5 & +3 & -5 & \end{array}$$

Notice that the sequence is formed by subtracting 5 to the first number and adding 3 to the resulting number. Subtracting 5 and adding 3 is done alternately for the rest of the sequence.

Thus, we need to add 3 to 73 to obtain the next term of the sequence.

$$73 + 3 = 76$$

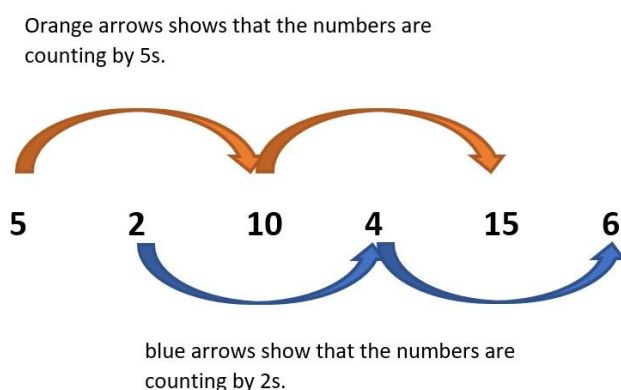
6. Answer: B

Explanation: The given number sequence is formed by listing the prime numbers from 13 onwards (17, 19, and 23 are all prime numbers). Hence, the next term of the sequence is the prime number after 23. This number is 29.

7. Answer: C

Explanation:

Shown below is the pattern of the given sequence.



Notice that the next term is the fourth term when you are counting by 5s. This number is 20.

8. Answer: C

Explanation: This sequence is just an Arithmetic Sequence in which the succeeding terms are obtained by adding a constant number to the previous terms. Specifically, the terms in the given sequence are obtained by adding 2 to the previous terms. Hence, we need to add 2 to 13 to obtain the next term.

$$13 + 2 = 15$$

9. Answer: A

Explanation: The sequence is formed by subtracting 2 to the first term, 4 to the second term, 6 to the second term, and 8 to the third term. Therefore, we will just subtract 10 to the fourth term and then subtract 12 to the fifth term to obtain the next two terms.

$$82 - 10 = 72$$

$$72 - 12 = 60$$

10. Answer: B

Explanation: Looking closely, the succeeding terms of the sequence is obtained by adding 0 as a digit to the decimal places. Thus, we just need to add 0 as a digit in 0.00001 to obtain the next term.

Thus, the succeeding term is 0.000001.

11. Answer: B

Explanation: The given sequence is a recursive sequence. The succeeding term is obtained by adding the two previous terms.

$$5 + 10 = 15$$

$$15 + 10 = 25$$

$$25 + 15 = 40$$

Thus, the next term can be obtained by adding 25 and 40:

$$40 + 25 = 65$$

12. Answer: D

Explanation: The numerator of the fraction is obtained by adding 2 to the previous term. Meanwhile, the denominator of the fraction is obtained by adding 4 to the previous term. Hence, to obtain the next term after $\frac{9}{16}$, we need to add 2 to 9 and the resulting number is the numerator. Afterwards, add 4 to 16 and the resulting number is the denominator.

$$\frac{9 + 2}{4 + 16} = \frac{11}{20}$$

13. Answer: B

Explanation: Shown below is the pattern of the sequence given:

$$\begin{array}{ccccccccc} 19 & & 17 & & 34 & & 32 & & 64 \\ \text{---} & & \text{---} & & \text{---} & & \text{---} & & \\ - 2 & & \times 2 & & - 2 & & \times 2 & & \end{array}$$

The sequence is formed by subtracting 2 from the first number and multiplying 2 to the resulting number. Subtracting 2 and multiplying 2 is done alternately for the rest of the sequence. Hence, the succeeding numbers can be obtained by subtracting 2 from 64 and multiplying the resulting number by 2.

$$\begin{aligned}64 - 2 &= 62 \\62 \times 2 &= 124\end{aligned}$$

Therefore, the succeeding terms are 62 and 124.

14. Answer: A

Explanation: The given sequence lists the cube (multiplying the given number three times by itself) of whole numbers from 2 onwards:

$$\begin{aligned}2^3 &= 2 \times 2 \times 2 = 8 \\3^3 &= 3 \times 3 \times 3 = 27 \\4^3 &= 4 \times 4 \times 4 = 64 \\5^3 &= 5 \times 5 \times 5 = 125\end{aligned}$$

Thus, the next terms can be obtained by getting the cube of 6 and 7:

$$\begin{aligned}6^3 &= 6 \times 6 \times 6 = 216 \\7^3 &= 7 \times 7 \times 7 = 343\end{aligned}$$

15. Answer: C

Explanation: The given sequence is a recursive sequence such that the terms in the sequence are defined by adding the two previous terms.

$$\begin{aligned}11 + 5 &= 16 \\16 + 5 &= 21 \\21 + 16 &= 37\end{aligned}$$

Thus, the succeeding term can be obtained by adding 21 and 37:

$$21 + 37 = 58$$

16. Answer: C

Explanation: Shown below is the pattern of the given sequence:

$$\begin{array}{ccccccc}
 92 & 88 & 94 & 90 & 96 & 92 & 98 \\
 \text{---} & \text{---} & \text{---} & \text{---} & \text{---} & \text{---} & \\
 -4 & +6 & -4 & +6 & -4 & +6 &
 \end{array}$$

The sequence is formed by subtracting 4 to the first term and adding 6 to the resulting number. Subtracting 4 and adding 6 is done alternately for the rest of the sequence. Thus, the next two terms can be obtained by subtracting 4 from 98 and adding 6 to the difference.

$$\begin{aligned}
 98 - 4 &= 94 \\
 94 + 6 &= 100
 \end{aligned}$$

17. Answer: C

Explanation: The sequence is formed by constantly subtracting 1 from the terms in the numerator and constantly adding 1 to the denominator. Hence, the next term can be obtained subtracting 1 from 2 and the difference will be the numerator. Meanwhile, add 1 to 7 and the sum will be the denominator.

Hence, the succeeding term is:

$$\frac{2-1}{7+1} = \frac{1}{8}$$

18. Answer: A

Explanation: Shown below is the pattern of the given sequence.

$$\begin{array}{ccccccc}
 0.25 & \frac{1}{2} & = & 0.50 & \frac{3}{4} & = & 0.75 \\
 \text{---} & \text{---} & & \text{---} & \text{---} & & \\
 +0.25 & & & +0.25 & & &
 \end{array}$$

The given sequence is an arithmetic sequence. That is, the sequence is formed by constantly adding 0.25 to the previous terms to obtain the succeeding terms. Thus, we need to add 0.25 to 0.75 and add again 0.25 to the resulting number to obtain the next two terms of this sequence.

$$0.75 + 0.25 = 1$$

$$1 + 0.25 = 1.25$$

The succeeding terms are 1 and 1.25. Note that 1.25 is equivalent to $\frac{5}{4}$.

19. Answer: D

Explanation: Shown below is the pattern of the given sequence:

$$\begin{array}{cccccc} 702 & 682 & 712 & 692 & 722 & 702 \\ \underbrace{\hspace{1cm}} & \underbrace{\hspace{1cm}} & \underbrace{\hspace{1cm}} & \underbrace{\hspace{1cm}} & \underbrace{\hspace{1cm}} & \\ -20 & +30 & -20 & +30 & -20 & \end{array}$$

The sequence is formed by subtracting 20 to the first number and adding 30 to the resulting number. Subtracting 20 and adding 30 is done alternately for the rest of the sequence. Thus, to obtain the next two terms of the sequence, we need to add 30 to 702 and subtract 20 to the resulting number.

$$30 + 702 = 732$$

$$732 - 20 = 712$$

20. Answer: A

Explanation: Shown below is the pattern of the given sequence.

$$\begin{array}{ccccccccc} 1 & 4 & 13 & 16 & 25 & 28 & 37 \\ \underbrace{\hspace{1cm}} & \underbrace{\hspace{1cm}} & \underbrace{\hspace{1cm}} & \underbrace{\hspace{1cm}} & \underbrace{\hspace{1cm}} & \underbrace{\hspace{1cm}} & \\ +3 & +9 & +3 & +9 & +3 & +9 & \end{array}$$

The sequence is formed by adding 3 to the first term and adding 9 to the resulting number. Adding 3 and adding 9 is done alternately for the rest of the sequence. Hence, the next two numbers can be obtained by adding 3 to 37 and adding 9 to the sum.

$$3 + 37 = 40$$



Analytical Ability Answer key

Set 4: *Number Sequence*

$$40 + 9 = 49$$



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To God be the glory!