Board –Foundation	Class – 9th	Topic – Arithmetic Progression

1. What is the 10th term of the AP: 2, 5, 8, 11, . . . ?

   (a) 29
   (b) 28
   (c) 30
   (d) 31

2. If the nth term of an AP is given by $a_n = 7n - 4$, what is its first term?

   (a) 3
   (b) 7
   (c) -4
   (d) 2

3. Which of the following sequences does NOT form an AP?

   (a) 3, 6, 9, 12

   (b) 10, 7, 4, 1

   (c) 2, 4, 8, 16

   (d) 15, 13, 11, 9

4. The sum of the first 15 terms of an AP is 525. If the first term is 7, what is the common difference?

   (a) 2
   (b) 3
   (c) 4
   (d) 5

5. If the 5th term of an AP is 20 and the 10th term is 35, what is the common difference?

   (a) 2
   (b) 3
   (c) 4
   (d) 5

6. Which term of the AP 6, 13, 20, 27, ... will be 83?

   (a) 10th
   (b) 11th
   (c) 12th
   (d) 13th

7. If $a = 4$, $d = 3$, and $n = 8$, what is the sum of the first 8 terms?

   (a) 100
   (b) 96
   (c) 104
   (d) 108

8. What is the common difference of the AP whose nth term is given by $a_n = 5n + 2$?

   (a) 2
   (b) 5
   (c) 7
   (d) 10

9. Which of the following is the general form of an arithmetic progression?

   (a) $a, a + d, a + 2d, \ldots$

   (b) $a, ar, ar^2, \ldots$

   (c) $a, a^2, a^3, \ldots$

   (d) $a, a - d, a - 2d, \ldots$

10. If the 3rd term of an AP is 15 and the 7th term is 27, what is the first term?

    (a) 6
    (b) 9
    (c) 12
    (d) 15

11. The sum of the first 20 terms of the AP: 1, 4, 7, ... is:

    (a) 610

    (b) 570

    (c) 590

    (d) 600

12. In the AP: 17, 13, 9, ..., which term will be -43?

    (a) 14th

    (b) 15th

    (c) 16th

    (d) 17th

13. If the sum of the first n terms of an AP is $3n^2 + 5n$, what is its nth term?

    (a) $6n + 5$

    (b) $6n + 2$

    (c) $3n + 5$

    (d) $3n + 2$

14. In an AP, if $a = 8$ and $d = -3$, what is the 6th term?

    (a) -7

    (b) -10

    (c) -8

    (d) -9

15. The sum of the first 12 terms of an AP is 300. If the last term is 45, what is the first term?

    (a) 10

    (b) 12

    (c) 15

    (d) 20

4. If $\cos X = \frac{a}{b}$, then $\sin X$ is equal to:

   (a) $\frac{b^2 - a^2}{b}$

   (b) $\frac{b - a}{b}$

   (c) $\frac{\sqrt{b^2 - a^2}}{b}$

   (d) $\frac{\sqrt{b - a}}{b}$

5. What is the value of $\tan 45°$?

   (a) 0

   (b) 1

   (c) $\sqrt{3}$

   (d) $\frac{1}{\sqrt{3}}$

6. Which trigonometric ratio is defined as "opposite side / hypotenuse"?

   (a) $\sin\theta$

   (b) $\cos\theta$

   (c) $\tan\theta$

   (d) $\cot\theta$

7. If $\tan\theta = \frac{3}{4}$, what is $\sin\theta$?

   (a) $\frac{3}{5}$

   (b) $\frac{4}{5}$

   (c) $\frac{5}{3}$

   (d) $\frac{4}{3}$

8. The value of $\sin 0°$ is:

   (a) 1

   (b) 0

   (c) $\frac{1}{2}$

   (d) Undefined

9. The value of $\cos 90°$ is:

   (a) 1

   (b) 0

   (c) $\frac{1}{2}$

   (d) Undefined

10. If $\tan\theta = 1$, what is the value of θ where $0° < \theta < 90°$?

    (a) $0°$

    (b) $30°$

    (c) $45°$

    (d) $60°$

11. Which is correct for a right triangle with sides 3, 4, and 5?

    (a) $\sin\theta = \frac{4}{5}$

    (b) $\cos\theta = \frac{3}{5}$

    (c) $\tan\theta = \frac{4}{3}$

    (d) All of the above

12. Which of the following is an identity?

    (a) $\sin^2\theta + \cos^2\theta = 1$

    (b) $\tan\theta = \frac{\sin\theta}{\cos\theta}$

    (c) $\sec\theta = \frac{1}{\cos\theta}$

    (d) All of the above

13. If $\sin\theta = \frac{1}{2}$, what is the value of θ where $0° < \theta < 90°$?

    (a) $30°$

    (b) $45°$

    (c) $60°$

    (d) $90°$

14. What is the reciprocal of $\sin\theta$?

    (a) $\cos\theta$

    (b) $\tan\theta$

    (c) $\sec\theta$

    (d) θ

15. If the value of $\cos\theta$ is negative and $\sin\theta$ is positive, in which quadrant does θ lie?

    (a) I

    (b) II

    (c) III

    (d) IV