WORKSHEET 1

CHAPTER 5 – ARITHMETIC PROGRESSIONS

1. In an AP if $a = -2.5$, $d = 0$, $n = 107$, then a_n will be
   (*a*) −4.5 (*b*) 2.5 (*c*) −2.5 (*d*) 5.4
2. How many terms of two digits are divisible by 3?
   (*a*) 30 (*b*) 31 (*c*) 40 (*d*) 29
3. The sum of first five terms of the AP : 3, 7, 11, 15, … is
   (*a*) 24 (*b*) 36 (*c*) 55 (*d*) 85
4. If the sum of an AP is $3n^2 - n$, then its first term is
   (*a*) 4 (*b*) 2 (*c*) 3 (*d*) 5
5. The sum of all 2-digit numbers divisible by 5 is
   (*a*) 1040 (*b*) 945 (*c*) 1255 (*d*) 1365
6. The 20th term from the end of the AP 3, 8, 13, …, 253 is
   (*a*) 168 (*b*) 155 (*c*) 148 (*d*) 158
7. The sum of first p terms of an AP is $(ap^2 + bp)$. What is the common difference of the AP?
   (*a*) $3a$ (*b*) a (*c*) $2a$ (*d*) $5a + b$
8. The sum of first 100 natural numbers is
   (*a*) 4050 (*b*) 5550 (*c*) 5050 (*d*) 1050
9. How many numbers lie between 10 and 600 which when divided by 3 leave a remainder 2?
10. Find the 20th term of the AP: 1, 5, 9, 13, 17, …
11. Find the sum of first 15 multiples of 8.
12. The first and last terms of an AP are 4 and 81 respectively. It the common difference is 7, how many terms are there in the AP and what is their sum?
13. Find the sum of first hundred even natural numbers which are divisible by 5.
14. The sum of the first n terms of an AP is given by $S_n = (3n^2 - n)$, find its nth term.
15. In an AP, the first term is 22, nth term is −11 and sum to first nth terms is 66. Find n and d common difference.
16. In an AP, the sum of first n terms is $\left(\frac{3n^2}{2} + \frac{5n}{2}\right)$. Find the 25th term.
17. Find the sum of all 3-digit numbers which are multiplies of 7.
18. If $(x + 2)$, $2x$, $(2x + 3)$ are three consecutive terms of an AP, find the value of x.
19. In an AP, the first term is 2, the last term is 29 and sum of the terms is 155. Find the common difference of the AP.
20. Find the sum of the following:

$$\left(1 - \frac{1}{n}\right) + \left(1 - \frac{2}{n}\right) + \left(1 - \frac{3}{n}\right) + \ldots \text{ up to } n \text{ terms.}$$

Name: ..... Teacher's signature: .....

Class: ..... X ..... Date: .....

ANSWERS

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1. (*c*) –2.5 **2.** (*a*) 30 **3.** (*c*) 55 **4.** (*b*) 2 **5.** (*b*) 945 **6.** (*d*) 158 **7.** (*c*) $2a$ **8.** (*c*) 5050

9. 197 **10.** 77 **11.** 960 **12.** 12, 510 **13.** 50500 **14.** $(6n - 4)$ **15.** $n = 12$, $d = -3$ **16.** 76

17. 70336 **18.** $x = 5$ **19.** 3 **20.** $\frac{1}{2}(n - 1)$