

# Chapter 5 Class 10 - Arithmetic Progressions - Mix Questions Worksheet 1 by *teachoo*

Chapter: [Chapter 5 Class 10 Maths - Arithmetic Progressions](#)

Name: \_\_\_\_\_

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## 2-Mark Questions

1. A water tank holds 5000 litres. If 200 litres of water are used every day, write the AP representing the amount of water left in the tank at the end of Day 1 , Day 2 , Day 3 , and so on. Is the common difference positive or negative?

2. A taxi fare is ₹ 25 for the first kilometer and then ₹ 12 for each additional kilometer. Explain why the sequence of total fare for 1 km, 2 km, 3 km, ... forms an AP. What is the first term and common difference?

3. In a chemical reaction, the temperature of a solution drops by  $3^{\circ}\text{C}$  every minute. If the initial temperature was  $40^{\circ}\text{C}$ , what will be the temperature after 10 minutes? Which AP concept is used here?

4. Two friends, Anjali and Beena, start saving money. Anjali starts with ₹500 and saves ₹50 every month. Beena starts with ₹200 and saves ₹100 every month. Write the APs for the monthly savings of both. Will Beena's total savings ever be equal to Anjali's? Explain conceptually.

5. A doctor prescribes a reducing dosage of a medicine. The patient takes 50 mg on the first day, 45 mg on the second day, 40 mg on the third day, and so on. On which day will the dosage be 5 mg ?

### 3-Mark Questions

6. The angles of a quadrilateral are in an AP. The smallest angle is  $60^{\circ}$ . Find the largest angle, explaining the geometric principle and the AP concept used.

7. A student decides to read a 430-page book. She reads 25 pages on the first day and decides to increase the number of pages she reads each day by 2 .

(a) Write the AP for the number of pages she reads daily.

(b) How many pages will she read on the 10th day?

(c) Will she be able to finish the book in 10 days? Justify your answer.

8. A mobile data plan costs ₹ 200 and includes 10 GB of data. For every additional GB used, a charge of ₹ 15 is added.

- (a) What is the cost if a user consumes 13 GB of data?
- (b) Write the sequence of costs for using 10 GB, 11 GB, 12 GB, ... Is it an AP?
- (c) If a user's final bill was ₹305, how much data did they use in total?

### 5-Mark Questions

9. An archaeological dig uncovers layers of soil. Each layer is uniformly 15 cm thick. The top layer (Layer 1) is dated to the period 1901-1920 AD. Each subsequent layer represents the 20-year period immediately preceding it (e.g., Layer 2 is 1881-1900 AD).

- (a) Write the AP for the end-year of the period for each layer (1920, 1900, 1880, ...).
- (b) An artifact is found at a depth of 3 meters from the surface. In which layer was it found?
- (c) What is the approximate historical time period (e.g., 1521-1540 AD) of this artifact?

10. A video game requires a player to earn Experience Points (XP) to level up. To go from Level 1 to Level 2, 1000 XP is needed. To go from Level 2 to Level 3, 1200 XP is needed. The XP required to advance to each subsequent level increases by a fixed amount.

- (a) The XP needed to go from Level 8 to Level 9 is 2400 . What is the fixed increase in XP per level (the common difference)?
- (b) What is the total XP a player must earn to go from Level 1 all the way to Level 10 ?
- (c) If a special "XP Boost" doubles all XP earned, how many "real" XP would a player need to earn to get the total XP required to reach Level 10?

## Important links

- Answer of this worksheet - <https://www.teachoo.com/25622/5377/Mix-Questions---Worksheet-1/category/Teachoo-Questions---Mix/>
- Full Chapter with Explanation, Activity, Worksheets and more – <https://www.teachoo.com/subjects/cbse-maths/class-10th/ch5-10th-arithmetic-progressions/>
- Science Class 10– <https://www.teachoo.com/subjects/science/class-10/>
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