

Chapter 5 Class 10 - Arithmetic Progressions - Mix Questions Worksheet 2 by *teachoo*

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

Name: _____

School: _____

Roll Number: _____

2-Mark Questions

1. A movie theatre observes the arrival of its audience. In the first 10 minutes after opening, 50 people arrive. In the next 10 minutes, 45 people arrive, and in the 10 minutes after that, 40 people arrive. If this pattern continues, how many people will arrive between 40 and 50 minutes after opening?
2. The numbers of seats in the rows of a theater form an AP. If the 10th row has 30 seats and the 12th row has 34 seats, what is the conceptual meaning of the common difference you calculate?

3-Mark Questions

3. A drone is at a height of 600 m . To land, it descends in a controlled manner. In the first minute, it descends 40 m . In the second minute, it descends 38 m . In the third minute, it descends 36 m . If it continues this pattern, after how many minutes will the drone land?
4. A company offers two salary plans for a new employee. Plan A: Starting salary of ₹ 25,000 per month with a fixed annual increment of ₹1,000. Plan B: Starting salary of ₹28,000 per month with a fixed annual increment of ₹700. In which year of service will the monthly salary from Plan A become equal to the monthly salary from Plan B?
5. A manufacturer of pots produces 100 pots on the first day. Due to improvements in the process, the production increases by 15 pots each day. The factory has an order to produce 3150 pots. In how many days will the factory be able to complete the order?
6. A child arranges blocks in a pattern. The first row has 1 block, the second has 3 , the third has 5 , and so on.
- (a) How many blocks are in the 20th row?
- (b) What is the total number of blocks used to make 20 rows?
- (c) This sum represents the sum of the first ' n ' odd numbers. What is the simplified formula for this sum?

5-Mark Questions

7. Two cars start a journey from the same point in the same direction.

- Car A travels at a constant speed of 60 km/h.
- Car B starts with a speed of 40 km/h and increases its speed by 5 km/h every hour.

- (a) Write the AP for the distance covered by Car B in each hour.
- (b) When will Car B's speed be equal to Car A's speed?
- (c) After how many hours will Car B overtake Car A? Explain your method.

8. A business's profit in its first year was ₹50,000. In its second year, it suffered a loss of ₹10,000. In its third year, its profit was ₹1,10,000. An analyst suggests this pattern of profit/loss might be following an arithmetic progression.

- (a) Assuming the analyst is correct, write the AP for the profit in the first 3 years (use negative for loss). Find the common difference.
- (b) What would be the predicted profit in the 5th year?
- (c) What is the company's total net profit after 6 years according to this model?

9. A baker starts her day at 6:00 AM. The first batch of bread takes 30 minutes to bake. As the industrial oven heats up, each subsequent batch of the same size takes 2 minutes less to bake than the previous one. The minimum baking time for a batch is 20 minutes.

- (a) Write the AP for the baking time of each batch.
- (b) How many batches can be baked before the baking time reaches its minimum of 20 minutes?
- (c) What is the total time spent baking these initial batches (until the minimum time is reached)?

10. In a science experiment, a ball is dropped into a viscous fluid. It travels 4 cm in the first second. Due to the fluid's resistance, it travels 0.5 cm less in each subsequent second than it did in the previous second.

- (a) Write the AP for the distance traveled in each second.
- (b) What is the total distance the ball travels before it theoretically stops?

(c) Explain what a negative term in this AP would signify physically (or why it would be physically impossible in this context).

Important links

- Answer of this worksheet - <https://www.teachoo.com/25623/5377/Mix-Questions---Worksheet-2/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/>
- Maths Class 10- <https://www.teachoo.com/subjects/cbse-maths/class-10th/>

For more worksheets, ad-free videos and Sample Papers – subscribe to

Teachoo Black here - <https://www.teachoo.com/black/>