ARITHMETIC PROGRESSION

CASE STUDY 1:

India is competitive manufacturing location due to the low cost of manpower and strong technical and engineering capabilities contributing to higher quality production runs. The production of TV sets in a factory increases uniformly by a fixed number every year. It produced 16000 sets in 6^{th} year and 22600 in 9^{th} year.

Based on the above information, answer the following questions:

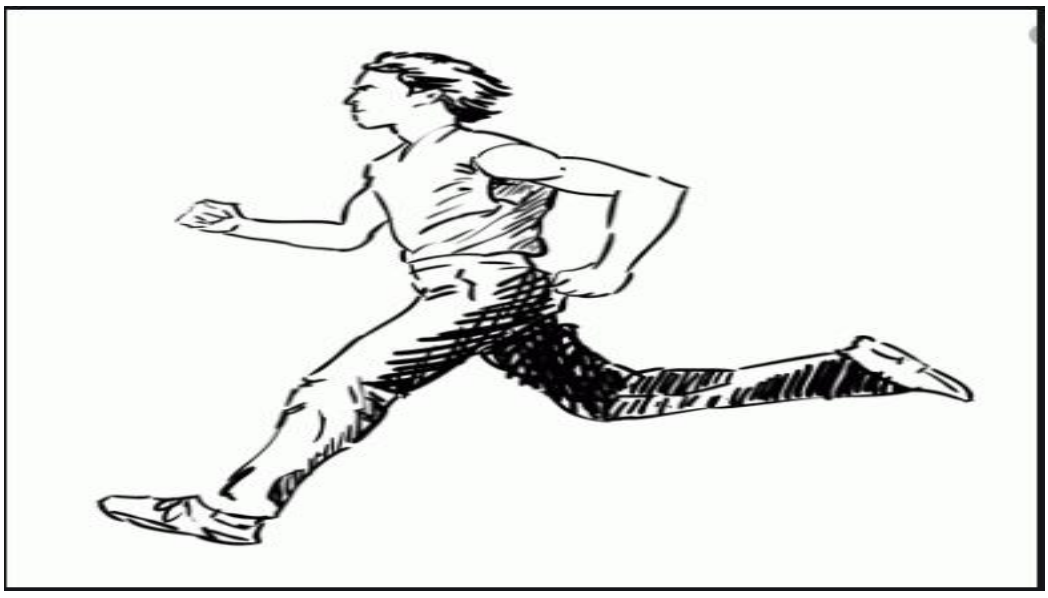
1. Find the production during first year.
2. Find the production during 8^{th} year.
3. Find the production during first 3 years.
4. In which year, the production is Rs 29,200.
5. Find the difference of the production during 7^{th} year and 4^{th} year.

ANSWER:

1. Rs 5000
2. Production during 8^{th} year is (a+7d)= 5000 + 2(2200) =20400
3. Production during first 3 year= 5000 + 7200 + 9400=21600
4. N=12
5. Difference= 18200-11600=6600

CASE STUDY 2:

Your friend Veer wants to participate in a 200m race. He can currently run that distance in 51 seconds and with each day of practice it takes him 2 seconds less.He wants to do in 31 seconds .



1. Which of the following terms are in AP for the given situation

a) 51,53,55….

b) 51, 49, 47….

c) -51, -53, -55….

d) 51, 55, 59…

2. What is the minimum number of days he needs to practice till his goal is achieved

a) 10

b) 12

c) 11

d) 9

3. Which of the following term is not in the AP of the above given situation

a) 41

b) 30

c) 37

d) 39

4. If n^{th} term of an AP is given by

$a_n = 2n + 3$ then common difference of an AP is

a) 2

b) 3

c) 5

d) 1

5. The value of x, for which 2x, x+ 10, 3x + 2 are three consecutive terms of an AP

a) 6

b) -6

c) 18

d) -18

ANSWER:

1. b
2. c
3. b
4. a
5. a

CASE STUDY 3:

Your elder brother wants to buy a car and plans to take loan from a bank for his car. He repays his total loan of Rs 1,18,000 by paying every month starting with the first instalment of Rs 1000. If he increases the instalment by Rs 100 every month , answer the following:

1. The amount paid by him in 30th installment is

a) 3900

b) 3500

c) 3700

d) 3600

2. The amount paid by him in the 30 installments is

a) 37000

b) 73500

c) 75300

d) 75000

3. What amount does he still have to pay offer 30th installment?

a) 45500

b) 49000

c) 44500

d) 54000

4. If total installments are 40 then amount paid in the last installment?

a) 4900

b) 3900

c) 5900

d) 9400

5. The ratio of the 1st installment to the last installment is

a) 1:49

b) 10:49

c) 10:39

d) 39:10

Answer:

1. a) 3900

2. b) 73500

3. c) 44500

4. a) 4900

5. b) 10 : 49