Case based integrated units of assessment (04 marks each) with subparts of the values of 1, 1 and 2 marks each respectively (Answer Any 5 of the following questions)

1. Saving money is a good habit and it should be inculcated in children from the beginning. Mrs. Pushpa brought a piggy bank for her child Akshar. He puts one five-rupee coin of his savings in the piggy bank on the first day. He increases his savings by one five-rupee coin daily
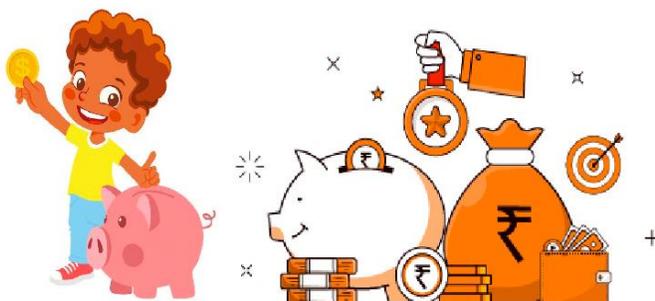
i. If the piggy bank can hold 190 coins of five rupees in all, find the number of days he can contribute to put the five rupee coins into it
ii. Find the total money he saved.
iii. How much money Akshar saves in 10 days?

OR

How many coins are there in piggy bank on 15th day?

2. Jaspal Singh is an auto driver. His autorickshaw was too old and he had to spend a lot of money on repair and maintenance every now and then. One day he got to know about the EV scheme of the Government of India where he can not only get a good exchange bonus but also avail heavy discounts on the purchase of an electric vehicle. So, he took a loan of ₹1,18,000 from a reputed bank and purchased a new autorickshaw.


Jaspal Singh repays his total loan of 118000 rupees by paying every month starting with the first instalment of 1000 rupees.

i. If he increases the instalment by 100 rupees every month, then what amount will be paid by him in the 30th instalment?

ii. If he increases the instalment by 100 rupees every month, then what amount of loan does he still have to pay after 30th instalment?

iii. If he increases the instalment by 100 rupees every month, then what amount will be paid by him in the 100th instalment?

OR

If he increases the instalment by 200 rupees every month, then what amount would he pay in 40th instalment?

3. Elpis Technology is a laptop manufacturer. The company works for many branded laptop companies and also provides them with spare parts. Elpis Technology produced 6000 units in 3rd year and 7000 units in the 7th year

Assemble chassis — Install circuit board — Install flat screen

Inspected by — Final Assembly — Install speakers
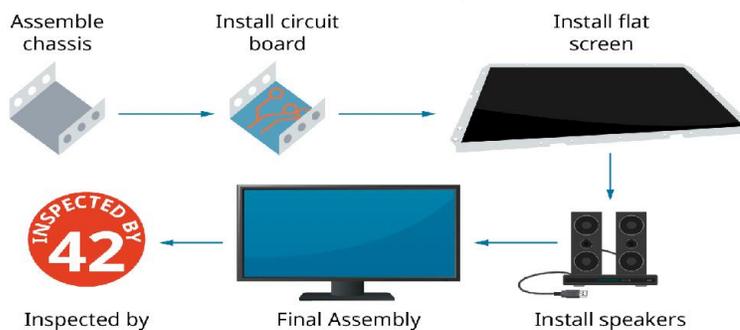
Assuming that production increases uniformly by a fixed number every year.

i. Find the production in the 1st year.

ii. Find the production in the 5th year.

iii. Find the total production in 7 years.

OR

Find in which year 10000 units are produced?

4. Deepa has to buy a scooty. She can buy scooty either making cashdown payment of ₹ 25,000 or by making 15 monthly instalments as below.

1st month - ₹ 3425, 2nd month - ₹ 3225, 3rd month - ₹ 3025, 4th month - ₹ 2825 and so on

i. Find the amount of 6th instalment.

ii. Total amount paid in 15 instalments.

iii. Deepa paid 10th and 11th instalment together find the amount paid that month.

OR

If Deepa pays ₹2625 then find the number of instalment.

5. The school auditorium was to be constructed to accommodate at least 1500 people. The chairs are to be placed in concentric circular arrangement in such a way that each succeeding circular row has 10 seats more than the previous one.


    i. If the first circular row has 30 seats, how many seats will be there in the 10th row?
    ii. For 1500 seats in the auditorium, how many rows need to be there?

<div align="center">OR</div>

    If 1500 seats are to be arranged in the auditorium, how many seats are still left to be put after 10th row?
    iii. If there were 17 rows in the auditorium, how many seats will be there in the middle row?

6. Akshat's father is planning some construction work in his terrace area. He ordered 360 bricks and instructed the supplier
to keep the bricks in such as way that the bottom row has 30 bricks and next is one less than that and so on.
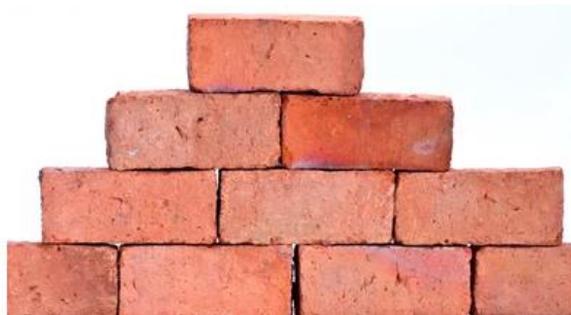
The supplier stacked these 360 bricks in the following manner, 30 bricks in the bottom row, 29 bricks in the next row, 28
bricks in the row next to it, and so on.
    i. In how many rows, 360 bricks are placed?
    ii. How many bricks are there in the top row?
    iii. How many bricks are there in 10th row?

<div align="center">OR</div>

If which row 26 bricks are there?

7. The students of a school decided to beautify the school on an annual day by fixing colourful flags on the straight passage of the school. They have 27 flags to be fixed at intervals of every 2 metre. The flags are stored at the position of the middlemost flag. Ruchi was given the responsibility of placing the flags. Ruchi kept her books where the flags were stored. She could carry only one flag at a time.
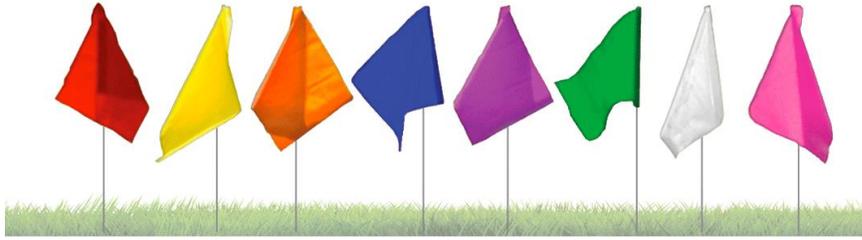
i. How much distance did she cover in pacing 6 flags on either side of center point?
ii. Represent above information in Arithmetic progression
iii. How much distance did she cover in completing this job and returning to collect her books?

OR

What is the maximum distance she travelled carrying a flag?

8. In the month of April to June 2022, the exports of passenger cars from India increased by 26% in the corresponding quarter of 2021–22, as per a report. A car manufacturing company planned to produce 1800 cars in 4th year and 2600 cars in 8th year. Assuming that the production increases uniformly by a fixed number every year.

Based on the above information answer the following questions.
i. Find the production in the 1st year
ii. Find the production in the 12th year.
iii. Find the total production in first 10 years

OR

In how many years will the total production reach 31200 cars?