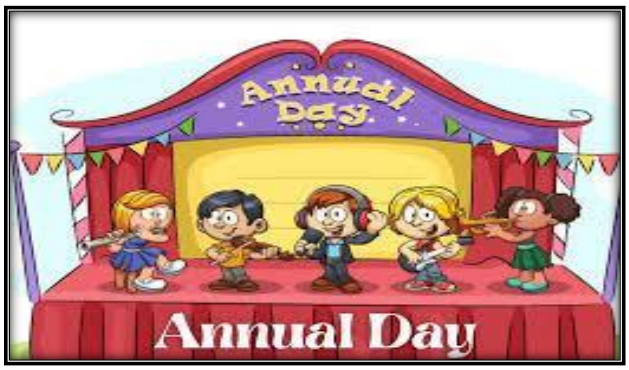
SATISH CHANDRA MEMORIAL SCHOOL
ACADEMIC SESSION: 2025-26
CASE STUDY & ASSERTION-REASON QUESTION BANK-CLASS VII
SEGMENT: ALGEBRA
CHAPTER 07: Comparing Quantities

CASE STUDY 01

Sunrise Public School organized its Annual Day event, inviting students, parents, and teachers to celebrate the school's achievements. Out of **800 students**, **25%** participated in various performances such as dance, drama, and music. Among the participants, **40% were from the junior section** (Classes I to V) and the rest from the senior section (Classes VI to X).
Additionally, **15% of the total students** were involved in event management and hospitality services. The remaining students attended the event as the audience.



Answer the following questions:

1. How many students participated in performances from the junior section?
2. How many students were involved in event management and hospitality services?
3. Calculate the number of students who attended the event as the audience.

CASE STUDY 02

The price of apples in market was **₹120 per kg** in January. Due to high demand during the festive season, the price increased by **15%** in March. However, after the festival, the price decreased by **10%** in May.

Answer the following questions:

1. What was the price of apples per kg in March after the 15% increase?
2. What was the price of apples per kg in May after the 10% decrease?
3. Calculate the overall percentage change in the price of apples from January to May.

CASE STUDY 03

Riya runs a small handicraft business where she makes and sells handmade bags. She started her business with an initial investment of ₹50,000. She buys raw materials from a wholesale market and sells the finished bags online.

In the month of August, Riya bought raw materials for ₹30,000. She also spent ₹5,000 on packaging and delivery. After completing the production, she listed the bags for sale at a total marked price of ₹60,000. To attract more customers, she offered a **10% discount** on the marked price.

By the end of the month, Riya was able to sell 90% of the bags. However, she incurred an additional expense of ₹3,000 for marketing and advertisements.

Answer the following questions:

1. Calculate the total discount given on the marked price.
2. Calculate the selling price of the bags after the discount.
3. Calculate Riya's profit or loss, along with the profit/loss percentage, for the month of August.
4. If Riya decides to increase the selling price by 5% after applying the discount, what will be the new selling price of the bags?
5. If Riya had sold all the bags without giving a discount, what would have been her profit percentage?
6. If Riya wants to achieve a **20% profit** on her total cost next month, what should be the minimum total marked price (assuming the discount and expenses remain unchanged)?

CASE STUDY 04

Rahul, a 13-year-old student, received ₹50,000 from his grandparents as a gift. He decided to deposit the money in a savings account to earn interest and learn about financial growth. He explored different options and came across two schemes at a local bank:

- **Scheme A:** 6% per annum simple interest for 3 years.
- **Scheme B:** 5% per annum simple interest for 4 years.

After discussing with his parents, Rahul decided to invest ₹30,000 in **Scheme A** and ₹20,000 in **Scheme B**.

At the end of the investment period, he plans to use the interest earned to buy a new bicycle and save the remaining amount for future expenses.

Answer the following questions:

1. Calculate the interest Rahul earns from **Scheme A** after 3 years.
2. Calculate the interest Rahul earns from **Scheme B** after 4 years.
3. Find the total interest Rahul earns from both schemes.
4. Calculate the total amount Rahul will have at the end of the investment period.
5. If Rahul buys a bicycle worth ₹12,500 from the amount earned, how much amount will he be left with?
6. If Rahul decides to reinvest the remaining amount for another 2 years at 4% simple interest per annum, how much total amount will he earn from this reinvestment?

CASE STUDY 05

Last year, Kartik Shankar Paul, a famous poet and story book writer of our generation passed away. He wrote many books for children and also won the Sahitya Akademi Award for his contributions in Bengali literature.

The Mitra & Ghosh publishers has the copyright of all his published books.

After he passed away, his wife and daughter found a will in his locker.

In the will it was written that after his death every year, 40% of the profit gained by selling his books in a year, will be provided as royalty to his wife, Manikuntala devi.

According to the will, the publishers provided a cheque of Rs. 6, 50, 000 to Manikuntala Devi. She deposited the money in SBI as MIS and for that bank will provide 7.8% interest per annum which will be payable quarterly.

She also found some unpublished manuscript of poems and handed them over to publisher by making a deal that the publisher has to pay her the selling price of 20 copies for each 100 copies of books sold.

Mitra & Ghosh published the book with an MRP of Rs. 350 and sell it at 30% discount. It is found that at the end of one year, they were able to sell total 550 copies of the book.

Q1. What was the selling price of Kartik babu's last book?

Q2. After one year of the publication of the book, how much amount will the publisher have to pay to Manikuntala Devi?

Q3. How much interest does Manikuntala Devi receive quarterly from SBI for the MIS?

Q4. Calculate the total profit earned by the publisher before the death of Kartik babu.

Q5. If Manikuntala Devi asked to give her the selling price of 24 copies instead of 20 copies for each 100 copies of books sold in her deal with publisher, then how much money will she earn more?

Assertion – Reason Based Questions

INSTRUCTIONS: All the questions given below are **Assertion** and **Reason** based questions. Two statements are given, one labelled as **Assertion** and the other is labelled as **Reason**. Select the correct options from the codes (**a**), (**b**), (**c**), (**d**)as given below.

(**a**) Both **Assertion**(**A**) and **Reason**(**R**) are correct and **Reason**(**R**) is the correct explanation of **Assertion**(**A**).

(**b**) Both **Assertion**(**A**) and **Reason**(**R**) are correct but **Reason**(**R**) is not the correct explanation of **Assertion**(**A**).

(**c**)**Assertion**(**A**) is true but **Reason**(**R**) is false.

(**d**)**Assertion**(**A**) is false but **Reason**(**R**) is true.

1. **Assertion**(**A**): A 20% discount on an item means that the customer pays 80% of the original price.
Reason(**R**): The discount is added to the original price to find the selling price.

2. **Assertion**(**A**): If the selling price of an item is ₹120 and the cost price is ₹100, then the profit percentage is 20%.
Reason(**R**): Profit percentage is calculated by finding the difference between the selling price and cost price, and dividing by the selling price.

3. **Assertion**(**A**): Simple interest is calculated on the principal amount only.
Reason(**R**): Simple interest is calculated by multiplying the principal amount by the rate of interest and time period.

4. **Assertion**(**A**): If the cost price of an item is ₹500 and the selling price is ₹600, then the item is sold at a loss.
Reason(**R**): Loss occurs when the selling price is less than the cost price.

5. **Assertion**(**A**): If one dozen toys are bought for ₹720 and 8 toys are sold for ₹480, there is a gain of 10% .
Reason(**R**): The percentage of gain or loss is always calculated on the cost price of an article.