



Maths Accelerator Centre

1 Marine Parade Central, #12-03, Parkway Centre, S 449408

Tel/SMS/Whatsapp : 87257203 Email : maths.accelerator.centre@gmail.com

P6 Problem Sums – Mini Lesson

Term 1 Lesson 4

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Revision Notes:

Solving Percentage Questions Using Before-Change-After Table

Key Ideas

The **Before-Change-After (BCA) table** is a highly effective organizational tool for solving multi-step word problems involving changes in quantities. It allows you to visualize the transformation of data from its initial state to its final state, making it much harder to lose track of numbers along the way.

Step 1: Construct the Table

Create a grid where the rows represent the items (T-shirts and Blouses) and the columns represent the timeline of the problem. This separates the "knowns" from the "unknowns" immediately.

Step 2: Assign 100% to One Group

In percentage-based problems, assign 100% (or 100 units) to the original value of the unknown group. In our discussion question, we set the initial number of blouses as 100%. Since 20% were sold, the "After" value for blouses 80%.

Step 3: Form an Equation and Solve

Link the table data to the final total given in the problem. Follow the steps shown in the video for the detailed steps needed to solve the question.

Key Takeaways

- **Visual Mapping:** It turns a dense paragraph into a structured map, reducing cognitive load and preventing calculation errors.
- **Consistency is Key:** Always ensure the "Change" row reflects whether items were added (+) or removed (-).
- **The "Total" Anchor:** Problems usually provide a final total or a final ratio. The BCA table helps you identify exactly which parts of your "After" column need to be added together to equal that final number.
- **Versatility:** This strategy works equally well for percentages, ratios, and fractions (where you might use "units" instead of percentages).

Discussion Question

Follow the trainer in this video and solve this question.

A shop had 60 t-shirts and some blouses at first.

After 10 t-shirts and 20% of the blouses were sold,
the shop had a total of 118 t-shirts and blouses left.

How many blouses did the shop have at first?

Practice Time

Here are **4 practice questions** based on this strategy.

Follow the step-by-step method we discussed in the video to solve each one.

- ✔ Work through the problems carefully.
- ✔ Check your solutions against the **Answer Key** provided on the last page.

1. A store had **80 markers** and some boxes of crayons at first. After **15 markers** and **10% of the crayons** were sold, the store had a total of **173** markers and crayons left. How many boxes of crayons did the store have at first?

2. A bakery had **50 chocolate cakes** and some vanilla cakes at first. After **12 chocolate cakes** and **40% of the vanilla cakes** were sold, the bakery had a total of **98** cakes left. How many vanilla cakes did the bakery have at first?

3. A shop had **120 tablets** and some laptops at first. After **30 tablets** and **25% of the laptops** were sold, the shop had a total of **240** tablets and laptops left. How many laptops did the shop have at first?

4. A boutique had **45 dresses** and some skirts at first. After **5 dresses** and **50% of the skirts** were sold, the boutique had a total of **100** items left. How many skirts did the boutique have at first?

Answer Key

1. 120

2. 100

3. 200

4. 120