# Primary 5
# Units & Part Model
## Lesson 5:
## Before and After(I)
## (more/less than)

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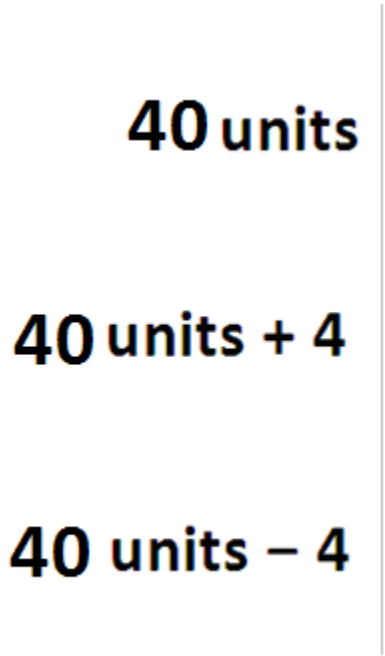
# LESSON 5: Before and After (I) (more/less than)

## BEFORE YOU BEGIN

Let's start with a simple example to illustrate how positive and negative model can be label:-

## LABEL OF MODEL



## COMPARISION MODEL

Find the value of 1 unit for the following:-

a) **Positive Statement:**

3u + 8 = 5u +2

b) **Negative Statement (I):**

3u + 6 = 5u - 2

c) **Negative Statement (Ii):**

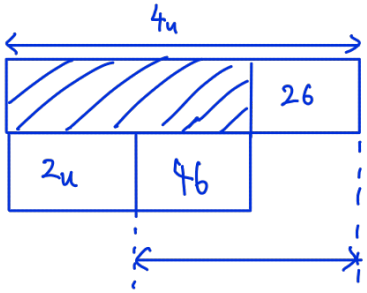
3u - 2 = 5u - 6

## GUIDED EXAMPLE 1

The ratio of the number of men to women to children in a restaurant was 5 : 4 : 2.
After 26 women left the restaurant, there were 46 more women than children.
How many men were there in the restaurant?

| | Men | Women | Children |
|---|---|---|---|
| B | 5u | 4u | 2u |
| C | | −26 | |
| A | 5u | 2u + 46 | 2u |

✓ $4u - 26 = 2u + 46$ ✓




$4u - 2u = 46 + 26$

$2u = 72$

$1u = 72 \div 2$

$= 36$

$5u = 5 \times 36$

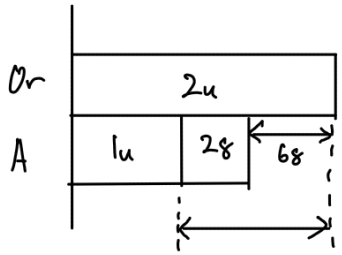
$= 180$

Ans : 180

## GUIDED EXAMPLE 2

A fruit seller had 68 more oranges than apples.
After selling $\frac{1}{2}$ of the oranges, there were 28 more apples than oranges.
Find the total number of fruits he had at first.

| | Oranges | Apples | Total |
|---|---|---|---|
| B | 2u | 1u + 28 | 3u + 28 |
| C | − 1u | | |
| A | 1u | 1u + 28 | |




$2u - 1u = 28 + 68$

$1u = 96$

$3u + 28 = 3 \times 96 + 28$

$= 316$

Ans : 316

## GUIDED EXAMPLE 3

1u +140 1u

B Alan had $140 more than Cindy.

C Alan gave Cindy $20,

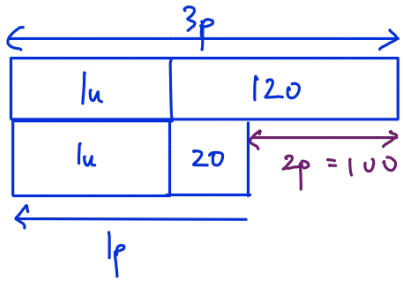
A 3p he had thrice as much money as Cindy. 1p

How much money did Alan have at first?

| | Alan | Cindy |
|---|---|---|
| B | 1u + 140 | 1u |
| C | −20 | +20 |
| A | 3p ↓ | 1p ↓ |
| | 1u + 120 | 1u + 20 |
| | ($150) | |

[1u + 120 = 3p]

[1u + 20 = 1p]




3p − 1p = 120 − 20

2p = 100

1p = 100 ÷ 2

= 50

3p = 3 × 50

= 150

150 + 20 = 170

Ans : $170

## GUIDED EXAMPLE 4

Lucas and Justin share a sum of money.

B Lucas had $50 more than Justin.

C Lucas gave $84 to Justin.

A As a result, Lucas had $\frac{1}{3}$ as much money as Justin.

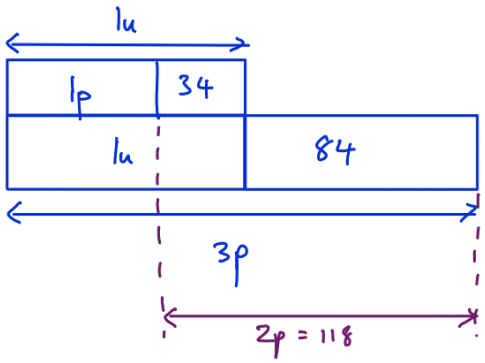
How much money did they have altogether?

| | Lucas | Justin | Total |
|---|---|---|---|
| B | 1u + 50 | 1u | 2u + 50 |
| C | − 84 | + 84 | |
| A | 1p<br>1u − 34 | 3p<br>1u + 84 | 4p |

* Total Unchanged

✓ [ 1u − 34 = 1p ]

✓ [ 1u + 84 = 3p ]




3p − 1p = 34 + 84

2p = 118

1p = 118 ÷ 2

= 59

4p = 4 × 59

= 236

Ans : 236

## GUIDED EXAMPLE 5

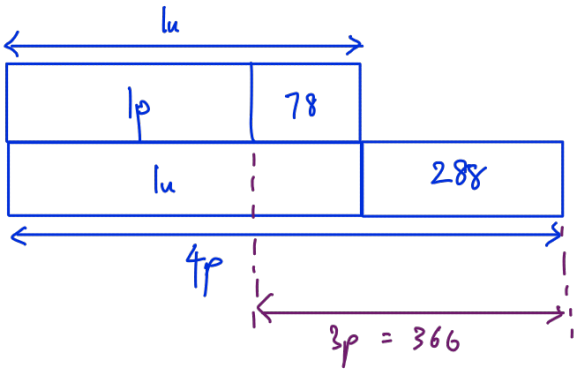
B
C
C
A

There were 234 more apples in Stall A than Stall B at first.
78 apples were transferred from Stall B to Stall A.
24 rotten apples from Stall A were thrown away.
As a result, there were 4 times as many apples in Stall A than in Stall B.
How many apples were there in Stall B at first?

| | Stall A | Stall B |
|---|---|---|
| B | 1u + 234 | 1u |
| C | + 78 | − 78 |
| C | − 24 | |
| A | 4p<br>1u + 288 | 1p<br>1u − 78 |

(122)

✓ [ 1u + 288 = 4p ]
✓ [ 1u − 78 = 1p ]




$4p - 1p = 78 + 288$

$3p = 366$

$1p = 366 \div 3$

$= 122$

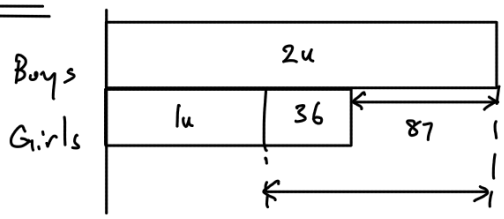
$122 + 78 = 200$

Ans : 200

## GUIDED EXAMPLE 6

There were 87 more boys than girls in a camp.
After $\frac{1}{2}$ of the boys left, there were 36 more girls than boys.
How many children were there in the camp at first?

| | Boys | Girls | Total |
|---|---|---|---|
| B | 2u | 1u + 36 | 3u + 36 |
| C | -1u | | |
| A | 1u | 1u + 36 | |




$2u - 1u = 36 + 87$

$1u = 123$

$3u + 36 = 3 \times 123 + 36$

$= 405$

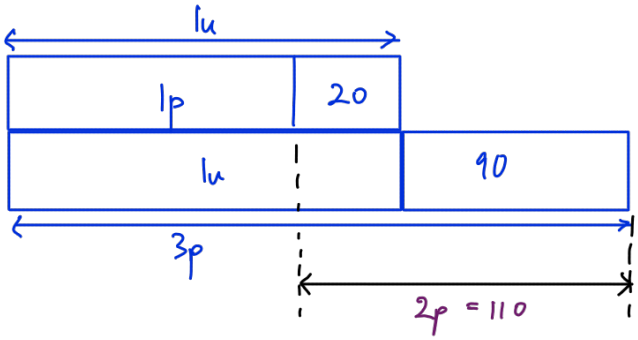
Ans : 405

## BUILD YOUR UNDERSTANDING

1. Bill and Ernest share some marbles.
   B Bill had 70 marbles more than Ernest.
   C Ernest gave 20 marbles to Bill.
   A As a result, Bill had thrice as many marbles as Ernest.
   How many marbles did Bill have at first?

| | Bill | Ernest |
|---|---|---|
| B | 1u+70 | 1u |
| C | +20 | −20 |
| A | 3p<br>1u+90<br>($165) | 1p<br>1u−20 |

[1u + 90 = 3p]
[1u − 20 = 1p]




3p − 1p : 20 + 90
2p = 110
1p = 110 ÷ 2
= 55
3p = 3 × 55
= 165
165 − 20 = 145

Ans : $145

2. Stella saved $84 less than Jenny.
After Stella donated $\frac{2}{5}$ of her money to charity and Jenny spent $\frac{2}{3}$ of her money,
They had the same amount of money left.
How much money did Jenny have at first?

| | Stella | Jenny |
|---|---|---|
| B | 5u | 3p (×3) 9u |
| C | −2u | −2p (×3) −6u |
| A | 3u | 1p (×3) 3u |

$9u - 5u = 84$

$4u = 84$

$1u = 84 \div 4$

$= 21$

$9u = 9 \times 21$

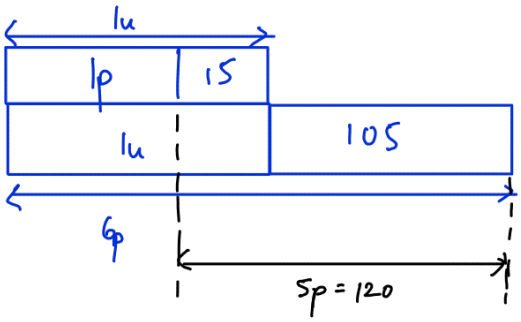
$= 189$

Ans : $189

3. Tom had 90 more marbles than Jerry at first.
After Tom gave 105 marbles to Jerry,
Jerry had 6 times as many marbles as Tom.
Find the number of marbles Tom had at first.

| | Tom | Jerry |
|---|---|---|
| B | 1u + 90 | 1u |
| C | − 105 | + 105 |
| A | 1p (24) | 6p |
| | 1u − 15 | 1u + 105 |

✓ [1u − 15 = 1p]
✓ [1u + 105 = 6p]

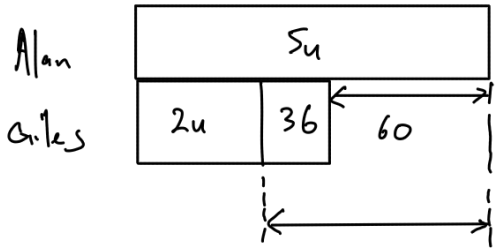



6p − 1p = 15 + 105
5p = 120
1p = 120 ÷ 5
= 24
24 + 105 = 129

Ans : 129

4. B C A The ratio of the number of sweets Alan had to Giles had was 5 : 2.
After Giles bought another 36 sweets,
Alan had 60 more sweets than Giles.
How many sweets did they have altogether in the end?

| | Alan | Giles | Total |
|---|---|---|---|
| B | 5u | 2u | |
| C | | +36 | |
| A | 5u | 2u + 36 | 7u + 36 |




$5u - 2u = 36 + 60$

$3u = 96$

$1u = 96 \div 3$

$= 32$

$7u + 36 = 7 \times 32 + 36$

$= 260$

Ans : 260

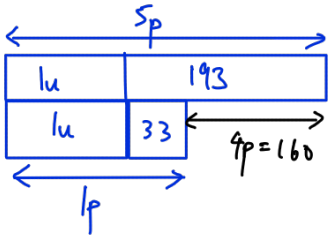
5. B There were 226 more children in Group A than in Group B at first.
   C After 33 children from Group A moved to Group B,
   A there were 5 times as many children in Group A as in Group B.

a) How many more children were there in Group A than Group B in the end?

b) How many children were there in Group A and Group B altogether?

| | Group A | Group B | Total |
|---|---|---|---|
| B | 1u + 226 | 1u | |
| C | − 33 | + 33 | |
| A | 5p (1u + 193) | 1p (1u + 33) | 6p |

[1u + 193 = 5p]
[1u + 33 = 1p]




5p − 1p = 193 − 33

a) 4p = 160

b) 6p = 6 × 160/4

= 240

Ans : a) 160

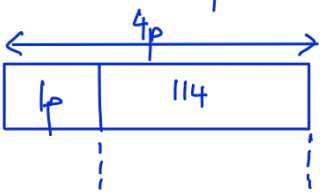
b) 240

6. Audrey and Cynthia had some beads.
   B Cynthia had 104 more beads than Audrey.
   C After Cynthia gave away 218 beads,
   A Audrey had 4 times as many beads as Cynthia.
   Find the number of beads Cynthia had in the end.

| | Audrey | Cynthia | |
|---|---|---|---|
| B | 1u → 4p | 1u+104 → 4p+104 | |
| C | | −218 | |
| A | 4p | 1p | |

$4p + 104 - 218 = 1p$

$4p - 114 = 1p$




$4p - 1p = 114$

$3p = 114$

$1p = 114 \div 3$

$= 38$

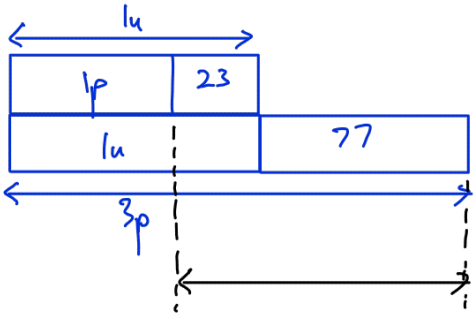
Ans : 38

**CHALLENGE YOURSELF**

At first, Caron had 54 fewer cards than Samantha.
After Caron gave 23 cards to Samantha,
Samantha had thrice as many cards as Caron.
How many cards did Samantha have at first?

| | Caron | Samantha |
|---|---|---|
| B | 1u | 1u + 54 |
| C | −23 | +23 |
| A | 1p<br>1u − 23 | 3p<br>1u + 77<br>(150) |

✓ [1u − 23 = 1p]
[1u + 77 = 3p]




3p − 1p = 23 + 77

2p = 100

3p = 3 × $\frac{100}{2}$

= 150

150 − 23 = 127

Ans : 127

**CHALLENGE YOURSELF**

Sam had 88 more muffins than Julia.
He gave 20% of his muffins to Julia.
He then had twice as many muffins as Julia.
How many muffins did Sam have at first?

(Red Swastika P5 SA2 Paper 2 Q13)

| | Sam | Julia |
|---|---|---|
| B | 5u | 1u |
| C | -1u | +1u |
| A | 4u | 2u |

$5u - 1u = 88$

$4u = 88$

$5u = 5 \times \frac{88}{4}$

$= 110$

Ans : 110