



Primary 5
Model / Branching
Lesson 2:
Remainder Scenario (II)

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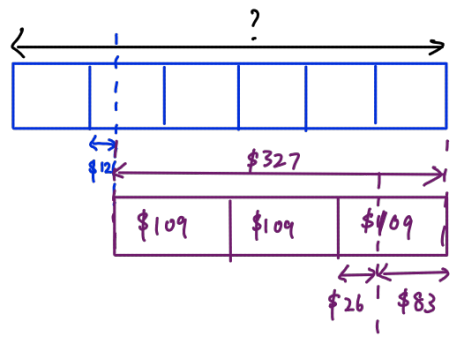
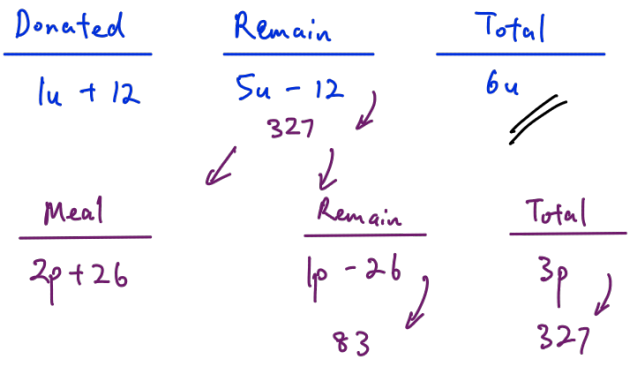
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LESSON 2: Quantity Change by Whole Number

GUIDED EXAMPLE 1

Mr. Gopal donated $\frac{1}{6}$ of his money ^{6u} and an additional \$12 to the Red Cross Society.
 He spent $\frac{2}{3}$ of the remaining money ^{3p} and an additional \$26 on a meal.
 He had \$83 left. How much money did Mr. Gopal have at first?



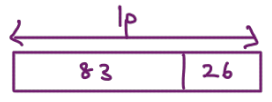
$$1p - 26 = 83$$

$$1p = 83 + 26$$

$$= 109$$

$$3p = 3 \times 109$$

$$= 327$$



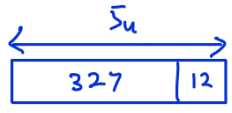
$$5u - 12 = 327$$

$$5u = 327 + 12$$

$$= 339$$

$$6u = 6 \times \frac{339}{5}$$

$$= 406.80$$



$$5u = 327 + 12$$

$$= 339$$

$$1u = 339 \div 5$$

$$= 67.80$$

$$6u = 6 \times 67.80$$

$$= 406.80$$

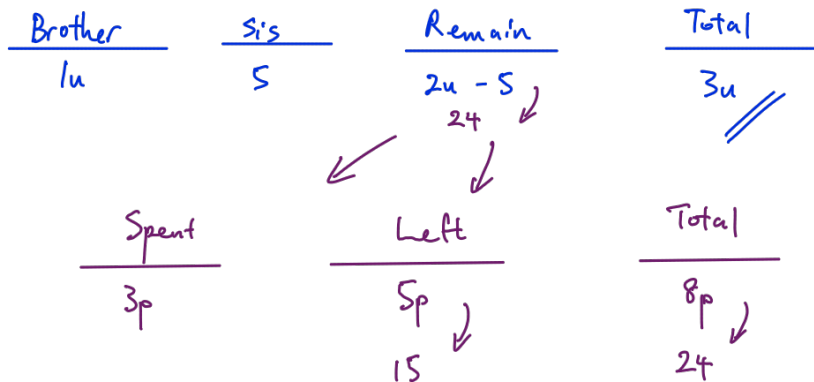
Ans: \$406.80

GUIDED EXAMPLE 2

Ali gave $\frac{1}{3}$ of his money to his brother and gave \$5 to his sister.

He then spent $\frac{3}{8}$ of the remainder and had \$15 left.

How much was his money at first?



$$5p = 15$$

$$8p = 8 \times \frac{15}{5}$$

$$= 24$$



$$2u - 5 = 24$$

$$2u = 24 + 5$$

$$= 29$$

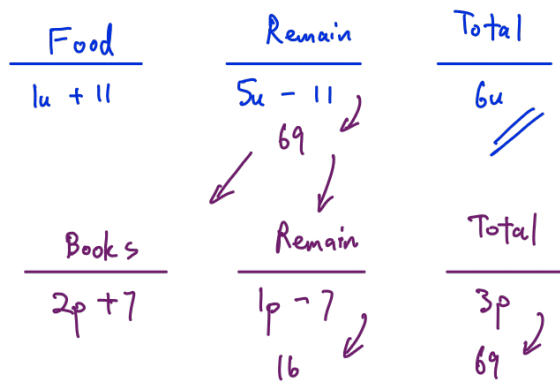
$$3u = 3 \times \frac{29}{2}$$

$$= 43.50$$

Ans : \$43.50

GUIDED EXAMPLE 3

Bill spent $\frac{1}{6}$ of his money and an additional \$11 on food.
 He then spent $\frac{2}{3}$ of the remaining money and an additional \$7 on books.
 Given that he was left with \$16, how much money did Bill have at first?



$$1p - 7 = 16$$

$$1p = 16 + 7$$

$$= 23$$

$$3p = 3 \times 23$$

$$= 69$$

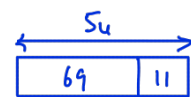
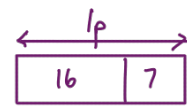
$$5u - 11 = 69$$

$$5u = 69 + 11$$

$$= 80$$

$$6u = 6 \times \frac{80}{5}$$

$$= 96$$



Ans : \$96

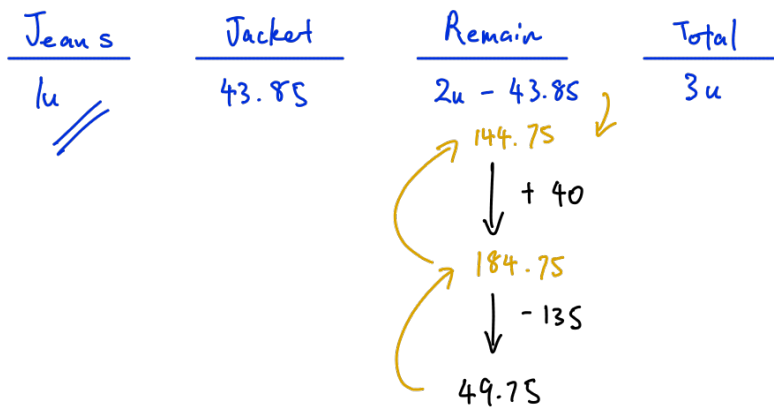
GUIDED EXAMPLE 4

Raju had some money.

On Monday, he spent $\frac{1}{3}$ of his money on a pair of jeans and \$43.85 on a jacket.

On Tuesday, he received \$40 from his mother.
He then spent \$135 to buy a watch and had \$49.75 left in the end.

How much did the pair of jeans cost?



$$49.75 + 135 - 40 = 144.75$$

$$2u - 43.85 = 144.75$$

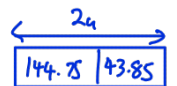
$$2u = 144.75 + 43.85$$

$$= 188.60$$

$$1u = 188.60 \div 2$$

$$= 94.30$$

Ans : \$94.30

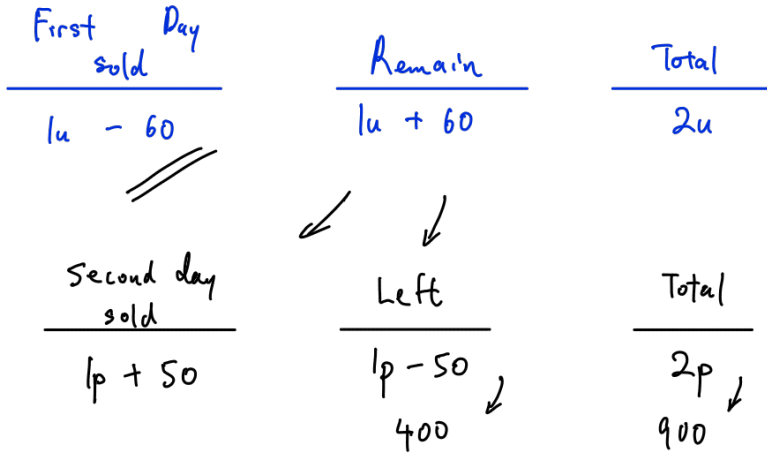


GUIDED EXAMPLE 5

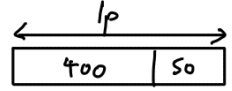
During the year end, ABC Supermarket sold 60 hampers ^{fewer} less than $\frac{1}{2}$ the number of hampers in the shop on the first day. ^{2u} $1u - 60$

On the second day, it sold 50 hampers more than $\frac{1}{2}$ of the remaining number of hampers and had 400 hampers left. ^{1p+50} $1p + 50$

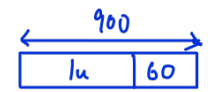
How many hampers was sold on the first day?



$$\begin{aligned}
 1p - 50 &= 400 \\
 1p &= 400 + 50 \\
 &= 450 \\
 2p &= 2 \times 450 \\
 &= 900
 \end{aligned}$$



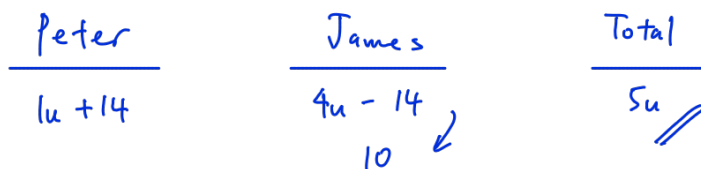
$$\begin{aligned}
 1u + 60 &= 900 \\
 1u &= 900 - 60 \\
 &= 840 \\
 1u - 60 &= 840 - 60 \\
 &= 780
 \end{aligned}$$



Ans: 780

BUILD YOUR UNDERSTANDING

1. Peter and James shared the cost of renting a bicycle.
 Peter paid \$14 more ^{than} $\frac{1}{5}$ of the cost for rental. ^{Sum}
 James paid the remaining \$10.
 How much was the total rental for the bicycle?



$$4u = 10 + 14$$

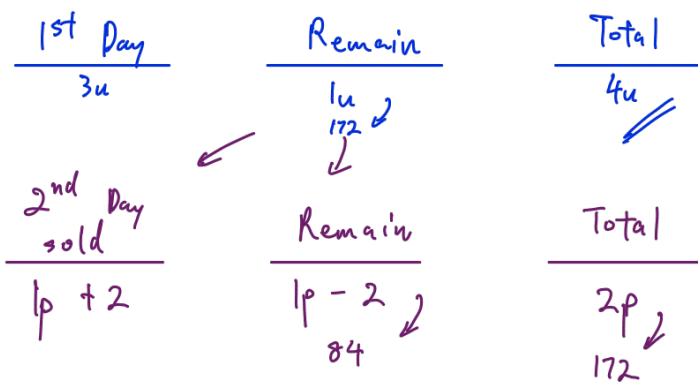
$$= 24$$

$$5u = 5 \times \frac{24}{4}$$

$$= 30$$

Ans : \$30

2. Sally baked some cookies.
 She sold $\frac{3}{4}$ of the cookies on the first day.
 She sold $\frac{1}{2}$ of the remaining cookies and 2 cookies on the second day.
 She had 84 cookies left in the end.
 How many cookies did Sally bake at first?



$$1p - 2 = 84$$

$$1p = 84 + 2$$

$$= 86$$

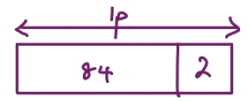
$$2p = 2 \times 86$$

$$= 172$$

$$1u = 172$$

$$4u = 4 \times 172$$

$$= 688$$



Ans : 688

3. Jane read $\frac{2}{9}$ and another 6 pages of a book on Monday, ^{9u} ^{2u+6}
 On Tuesday, she read $\frac{3}{5}$ of the remaining book and another 16 pages. ^{5p}
 There was 158 pages left. How many pages were there in the book?

| | | |
|---------|----------------|-------|
| Monday | Remain | Total |
| 2u + 6 | 7u - 6 435 | 9u |
| Tuesday | Remain | Total |
| 3p + 16 | 2p - 16 158 | 5p |
| | 435 | 435 |

$$2p - 16 = 158$$

$$2p = 158 + 16$$

$$= 174$$

$$5p = 5 \times \frac{174}{2}$$

$$= 435$$

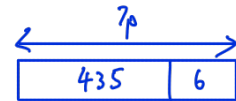
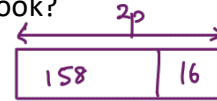
$$7u - 6 = 435$$

$$7u = 435 + 6$$

$$= 441$$

$$9u = 9 \times \frac{441}{7}$$

$$= 567$$



Ans : 567

4. Jay spent $\frac{3}{8}$ of his money to buy some books and \$40 on transport. He spent $\frac{2}{5}$ of the remaining on food and saved the rest. If he saved \$120, how much more money did he spend on the books than food?

| Books | Transport | Remain | Total |
|---------------|--------------|------------------|-------------|
| $3u$ 144 ✓ | 40 | $5u - 40$ 200 | $8u$ |
| | Food | Saved | Total |
| | $2p$ 80 ✓ | $3p$ 120 | $5p$ 200 |

$$3p = 120$$

$$1p = 120 \div 3$$

$$= 40$$

$$2p = 2 \times 40$$

$$= 80$$

$$5p = 5 \times 40$$

$$= 200$$

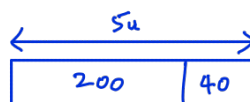
$$5u - 40 = 200$$

$$5u = 200 + 40$$

$$= 240$$

$$3u = 3 \times \frac{240}{5}$$

$$= 144$$



$$144 - 80 = 64$$

Ans : \$64

5. A stationary shop sold 100 books less than $\frac{1}{3}$ of the number of books on the first day. On the second day, it sold 90 books more than $\frac{1}{2}$ the remaining number of books. It sold 140 books on the third day and there were 60 books left. Find the number of books in the stationary shop at first.

| 1st Day | Remain | Total |
|------------|--------------------------------|-------------|
| $1u - 100$ | $2u + 100$ 580 | $3u$ |
| ← | ↓ | |
| 2nd Day | Remain | Total |
| $1p + 90$ | $1p - 90$ 200 -140 60 | $2p$ 580 |

$$60 + 140 = 200$$

$$1p - 90 = 200$$

$$1p = 200 + 90 = 290$$

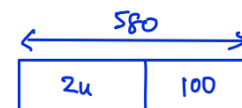
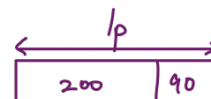
$$2p = 2 \times 290 = 580$$

$$2u + 100 = 580$$

$$2u = 580 - 100 = 480$$

$$3u = 3 \times \frac{480}{2}$$

$$= 720$$



Ans: 720

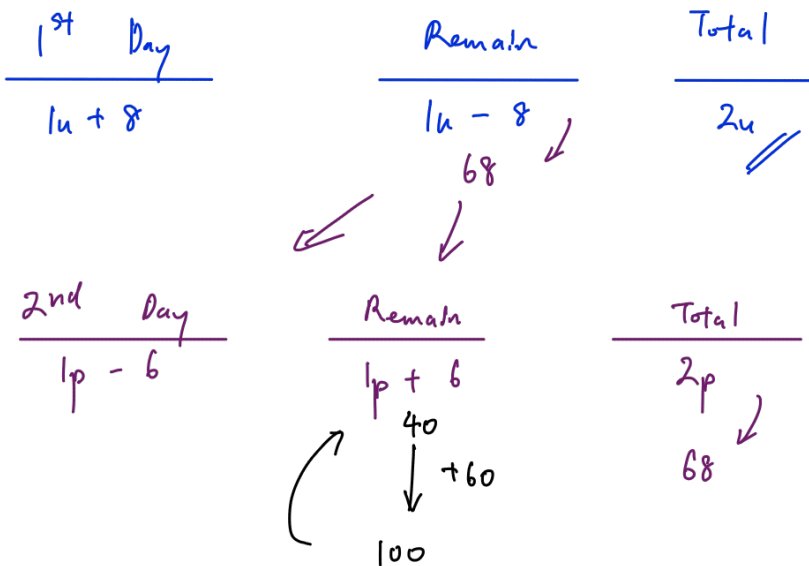
6. Joshua spent $\frac{1}{8}$ of his monthly salary and an additional \$50 on food. He spent $\frac{2}{5}$ of the remainder and an additional \$70 on household expenses. He was left with \$2630. How much was Joshua's monthly salary?

| | | | | |
|--|--|--|--|--|
| $\begin{array}{r} \text{Food} \\ \hline 1u + 50 \end{array}$ | $\begin{array}{r} \text{Remain} \\ \hline 7u - 50 \\ 4500 \end{array}$ | $\begin{array}{r} \text{Total} \\ \hline 8u \\ \hline \end{array}$ | $3p - 70 = 2630$ | $\begin{array}{ c c } \hline & 3p \\ \hline 2630 & 70 \\ \hline \end{array}$ |
| | $\swarrow \quad \downarrow$ | | $3p = 2630 + 70$ $= 2700$ | |
| $\begin{array}{r} \text{Household} \\ \text{expenses} \\ \hline 2p + 70 \end{array}$ | $\begin{array}{r} \text{Remain} \\ \hline 3p - 70 \\ 2630 \end{array}$ | $\begin{array}{r} \text{Total} \\ \hline 5p \\ 4500 \end{array}$ | $5p = 5 \times \frac{2700}{3}$ $= 4500$ | $\begin{array}{ c c } \hline & 7u \\ \hline 4500 & 50 \\ \hline \end{array}$ |
| | | | $7u - 50 = 4500$ $7u = 4500 + 50$ $= 4550$ | |
| | | | $8u = 8 \times \frac{4550}{7}$ $= 5200$ | |

Ans : \$5200

CHALLENGE YOURSELF

A stationary shop owner sold 8 books more than $\frac{1}{2}$ the number of books on the first day. He sold 6 books less than $\frac{1}{2}$ the remaining number of books on the second day. He ordered another 60 books the third day. Given that he had a total of 100 books then, find the number of books he had at first.



$$100 - 60 = 40$$

$$1p + 6 = 40$$

$$1p = 40 - 6$$

$$= 34$$

$$2p = 2 \times 34$$

$$= 68$$

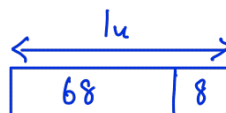
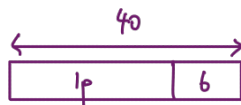
$$1u - 8 = 68$$

$$1u = 68 + 8$$

$$= 76$$

$$2u = 2 \times 76$$

$$= 152$$



Ans : 152