

Model Approach to Problem Solving

(Primary 5)



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LESSON 1: Portion Removed, Portion Remaining

Jenny had **some money**. She spent $\frac{3}{8}$ of her money.

Of the *remaining money*, she gave $\frac{1}{3}$ of it to her father and $\frac{1}{5}$ of it to her mother.
She saved the rest of her money. What fraction of her money did she save?

Conventional Model**Stack Model****Branch Approach**

GUIDED EXAMPLE 1

Simon spent $\frac{4}{7}$ of his pocket money on traveling

and $\frac{1}{5}$ of his remaining money on food.

What fraction of his pocket money was left?

GUIDED EXAMPLE 2

Muthu spent $\frac{1}{3}$ of his savings on a pair of soccer boots

and $\frac{1}{4}$ of the remainder of a jersey.

If he spent \$20 more on a pair of soccer boots than on his jersey,
what was his savings?

GUIDED EXAMPLE 3

Bobby had some marbles.

He gave $\frac{1}{3}$ of his marbles to Ken and $\frac{5}{6}$ of the remainder to Wendy.

He had 78 marbles left. How many marbles did he give to Ken?

GUIDED EXAMPLE 4

Natalie bought 30m of cloth.
She used 30% of it to make a dress
and 20% of the remaining cloth to make a shirt.
How many metres of cloth did she have left?

GUIDED EXAMPLE 5

Ahmad spent $\frac{1}{6}$ of his money on a pair of shoes
and $\frac{1}{2}$ of the remainder on 2 headphones.
After that, his mother gave him \$1292.
Now Ahmad has twice of his original amount of money.

- (a) How much money did he have at first?
- (b) Both headphones were sold at the same price.
How much money did he spend on each headphone?

GUIDED EXAMPLE 6

A box contained red, white and purple buttons.

$\frac{2}{5}$ of the buttons were red and $\frac{2}{9}$ of the remainder were white buttons.

The rest were purple buttons.

- a) Find the ratio of the number of purple buttons to the number of red buttons.
- b) There were 160 fewer white buttons than red buttons.
How many buttons were there in the box?

BUILD YOUR UNDERSTANDING

1. Mrs Wong spent $\frac{3}{7}$ of her salary on food and $\frac{3}{5}$ of the remainder on other daily expenses. What fraction of her salary was left?

2. There were some red, blue and green beads in a box.
 $\frac{4}{9}$ of the beads were blue.
The ratio of the number of red beads to the number of green beads was 3:5.
There were 287 more blue beads than green beads.
- a) Find the ratio of the number of red beads to the number of blue beads to the number of green beads in the box.
- b) How many green beads were there?

3. At a concert, 20% of the audience were children.
60% of the adults were women.
There were 48 more women than children.
- a) How many women were in the hall?
- b) Fifteen minutes before the concert ended,
some men left the hall. $\frac{1}{5}$ of the remaining audience were men.
How many men left before the end of the concert?

4. Andrew had \$840.
He spent $\frac{5}{7}$ of his money and
donated $\frac{1}{3}$ of the remainder to a charity.
How much money had he left?

5. James gave $\frac{7}{12}$ of his money to his mother and spent $\frac{3}{10}$ of the remaining money on a T-shirt. He saved the rest.
- (a) What fraction of his money did he spend on the T-shirt? Express your answer in the simplest form.
- (b) If he saved \$105, how much money did he have at first?

6. John had some green, red and black beads in his container.
 $\frac{3}{7}$ of the beads were red, $\frac{4}{5}$ of the remainder was green and the rest were black.
There were 44 more red beads than black beads.
- (a) How many beads did John have altogether?
- (b) How many more green beads than black beads were there in the container?