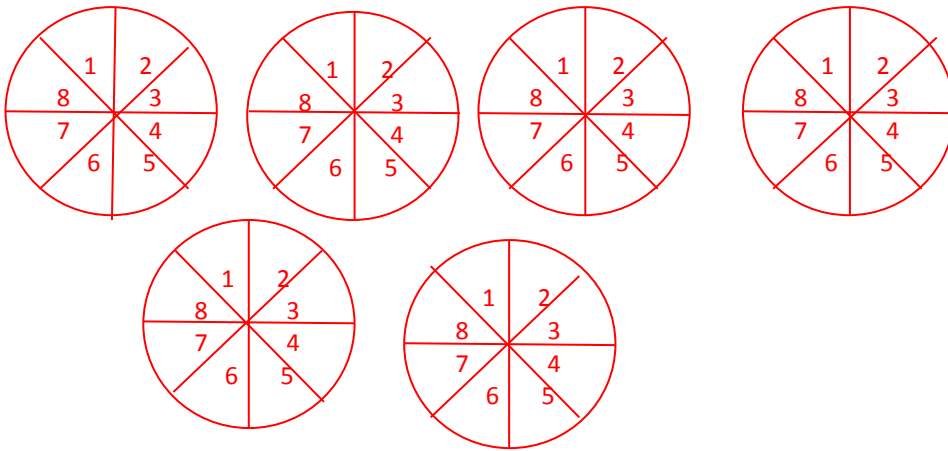


1. Draw a visual model to show how six pizzas can be equally shared among eight people if:

- The pizzas are cut into eighths



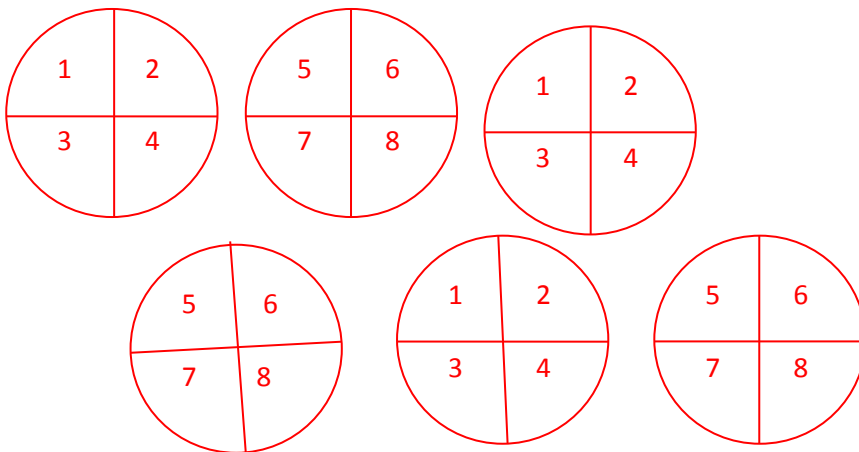
Each of the eight people is allocated a number from 1 - 8.

Each person gets $\frac{1}{8}$ of one pizza.

There are 6 pizzas so each person gets $6 \times \frac{1}{8}$, which is $\frac{6}{8}$ of a whole pizza.

Six share between eight is the same as $6 \div 8$ or $\frac{6}{8}$.

- The pizzas are cut into quarters



Each of the eight people is allocated a number from 1 - 8.

Each person gets $\frac{1}{8}$ of two whole pizzas, or $\frac{3}{4}$ of one whole pizza.

$\frac{3}{4}$ is equivalent to the $\frac{6}{8}$ each person got in the previous example when the pizza was cut into eighths.

In the second example, each slice is just twice as big.

The answers have to be the same, because in each example the same number of people are sharing the same number of pizzas.

Identify whether the following problems are **part-to-part** or **part-to-whole** representations and represent the answers using a ratio:

2. *Timber Town has a population of 200 people, 40 of these being children.*

a) *What is the ratio of children to the town's population?*

The children form a part of the population of the whole town, so this is a **part-to-whole** ratio. The ratio of children to the town's population is 40:200, or **1:5**.

b) *What is the ratio of adults to the town's population?*

The adults form a part of the population of the whole town, so this is a **part-to-whole** ratio. The ratio of adults to the town's population is 160:200, or **4:5**.

c) *What fraction of the town's population are children?*

The children form a part of the population of the whole town, so this is a **part-to-whole** ratio. The children comprise $\frac{1}{5}$ of the town's population ($\frac{1}{5} \times 200 = 40$).

d) *What fraction of the town's population are adults?*

The adults form a part of the population of the whole town, so this is a **part-to-whole** ratio. The adults comprise $\frac{4}{5}$ of the town's population ($\frac{1}{5} \times 200$ is 40, so $\frac{4}{5}$ is 4×40 , which is 160).

3. *On a school excursion, there is one adult supervisor for every group of six children.*

a) *What is the ratio of supervisors to children?*

The whole group on the excursion can be divided into two parts, supervisors and children. This is a **part-to-part** problem because the two parts are being compared to each other. The ratio of supervisors to children is **1:6**.

b) *If there are 36 children, how many adult supervisors are required?*

The whole group on the excursion can be divided into two parts, supervisors and children. This is a **part-to-part** problem because the two parts are being compared to each other.

There is one supervisor for each group of six children. There are six groups of six in 36, so **six supervisors** are required, one for each group.

c) *What fraction of the people on the excursion are supervisors?*

The whole group of people on the excursion can be divided into two parts, supervisors and children. This is a **part-to-whole** problem because the supervisors are being compared to the whole group.

There is one supervisor and six children in every group of seven people, so the supervisors make up $\frac{1}{7}$ of the people.