

Concept

- We can combine percents by adding or subtracting if they are percents of the same value

ex. The math club has 40 members and next year they expect to see a 10% increase in members.

This year

40 people.

= 100%.

→ There should be 44 members next year

Next year

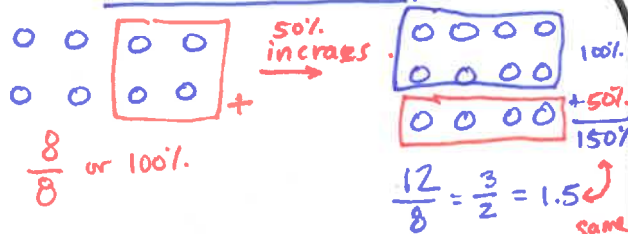
40 people + new members.

100% + 10% = 110%.

So... 110% of 40

$1.1 \times 40 = 44$ members

Visualization



Combined Percent

+ or -
add subtract.

Examples

- 20% decrease in population.

$$100\% - 20\% = 80\%$$

- Current salary \$50,000/year, 15% raise.

current salary + % raise
(50,000)

$$100\% + 15\% = 115\%$$

$$\frac{115\%}{100} = 1.15 \rightarrow 1.15 \times \$50,000$$

$$= \$57,500 \text{ (new salary)}$$

% Increase and Decrease

The # of students at a school is currently 1200. It is predicted that there will be a 10% increase in students next year followed by a 15% decrease the year after that.

Current year → 1200 students → 100%.

Next year → 100% + 10% (increase)
(1 year) new 100% or new total. → = 110%.

Following year → 100% - 15% (decrease)
(2 years) = 85%.

* use % of a %.

85% of 110% of 1200 students.

$$0.85 \times 1.10 \times 1200$$

= 1,122 students in 2 years from now.