



Printable Worksheets from [sofatutor.com](https://www.sofatutor.com)

Proportional Relationships

Aunt Sally:
 $\frac{13 \text{ min}}{1 \text{ mile}}$

Flo:
28 min
to finish

$$\frac{13 \text{ min}}{1 \text{ mile}} = \frac{28 \text{ min}}{\text{distance}}$$
$$\frac{13}{1} = \frac{28}{d}$$

- 1 Identify which pairs of ratios are proportional to each other and which are not.
- 2 Describe how to set-up and solve proportional relationships.
- 3 Solve the proportion for the missing variable.
- 4 Calculate and sort the proportional relationships.
- 5 Find the correct proportions, equations, and answer.
- 6 Solve the real-world proportion problems.
- + with lots of tips, answer keys, and detailed answer explanations for all of the problems.



The complete package, including all problems, hints, answers, and detailed answer explanations is available for all [sofatutor.com](https://www.sofatutor.com) subscribers.



Identify which pairs of ratios are proportional to each other and which are not.

Assign each pair to either proportional or not proportional.

1 $\frac{3}{9}$ and $\frac{4}{10}$

2 $\frac{5}{12}$ and $\frac{12}{3}$

3 $\frac{18}{4}$ and $\frac{9}{2}$

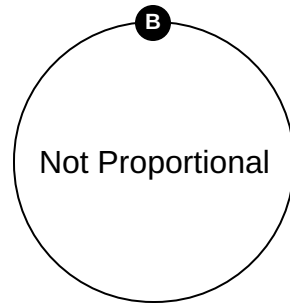
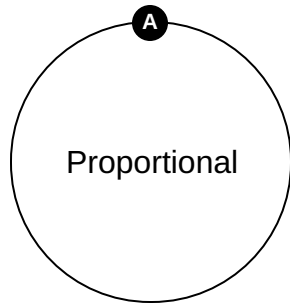
4 $\frac{15}{5}$ and $\frac{5}{15}$

5 $\frac{1}{9}$ and $\frac{27}{3}$

6 $\frac{2}{8}$ and $\frac{4}{16}$

7 $\frac{4}{8}$ and $\frac{5}{10}$

8 $\frac{10}{5}$ and $\frac{16}{8}$





Hints for solving these problems

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of 6

Identify which pairs of ratios are proportional to each other and which are not.

Hint #1

Two ratios are **proportional** to each other if they are equivalent ratios.

Hint #2

$\frac{18}{3}$ and $\frac{6}{1}$ are proportional because they both reduce to the fraction $\frac{6}{1}$.

Hint #3

$\frac{8}{12}$ and $\frac{3}{4}$ are not proportional to each other because they do not reduce to the same fraction, so they are no equivalent ratios.



Answers and detailed answer explanations for these problems

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of 6

Identify which pairs of ratios are proportional to each other and which are not.

Answer key: A: 3, 6, 7, 8 // B: 1, 2, 4, 5

Proportional

The following pairs of ratios are proportional to each other because both reduce to the same fraction, meaning that they are equivalent ratios:

- $\frac{4}{8}$ and $\frac{5}{10}$ simplifies to $\frac{1}{2}$ and $\frac{1}{2}$.
- $\frac{2}{8}$ and $\frac{4}{16}$ simplifies to $\frac{1}{4}$ and $\frac{1}{4}$.
- $\frac{10}{5}$ and $\frac{16}{8}$ simplifies to $\frac{2}{1}$ and $\frac{2}{1}$.
- $\frac{18}{4}$ and $\frac{9}{2}$ simplifies to $\frac{9}{2}$ and $\frac{9}{2}$.

Not Proportional

The following relationships are not proportional because simplifying the original ratios results in non-equivalent ratios:

- $\frac{5}{12}$ and $\frac{12}{3}$ simplifies to $\frac{5}{12}$ and $\frac{4}{1}$.
- $\frac{3}{9}$ and $\frac{4}{10}$ simplifies to $\frac{1}{3}$ and $\frac{2}{5}$.
- $\frac{15}{5}$ and $\frac{5}{15}$ simplifies to $\frac{3}{1}$ and $\frac{1}{3}$.
- $\frac{1}{9}$ and $\frac{27}{3}$ simplifies to $\frac{1}{9}$ and $\frac{9}{1}$.