Ratio: Writing a:b in Simplest Form

Year 7 Maths • comparing quantities with colons

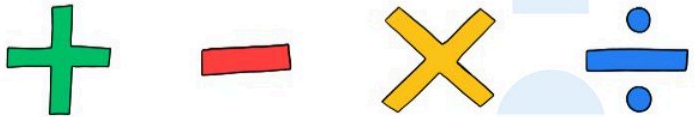


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What could this be?

I see orange liquid and lots of water. What is the recipe?



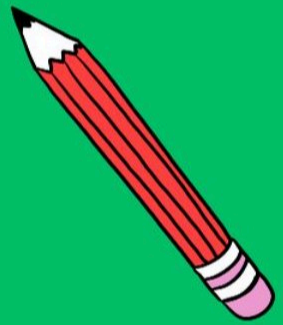


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$a^2+b^2=c^2$

How to Write a Ratio

1. Count first quantity, write that number first
2. Write a colon : with no gaps and no units
3. Count second quantity, write it after colon
4. Keep numbers in same order as words



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Two Ways to Compare

⚖️

Part to part

Blue to red paint 3:2 compares one part to another.

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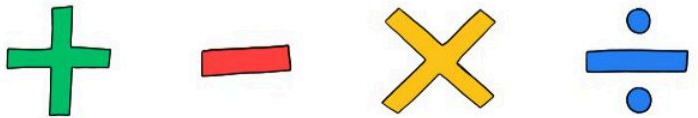
Part to whole

Orange to whole drink 1:5 compares one part to total.

🔁

Order matters

2:3 is not the same as 3:2, order tells the story.



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Think, pair, share

15 girls and 12 boys: what is ratio of girls to boys? Does order matter?





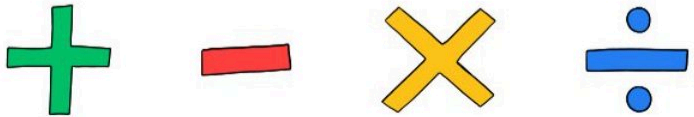
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What Is a Ratio?



▶ 0:00 – 3:14

- Watch how 3 to 2 is written as 3:2
- Listen for why order changes the meaning

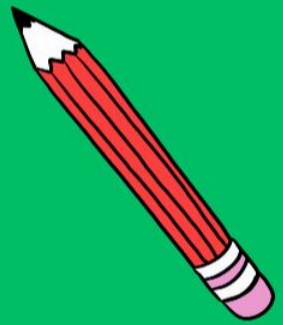


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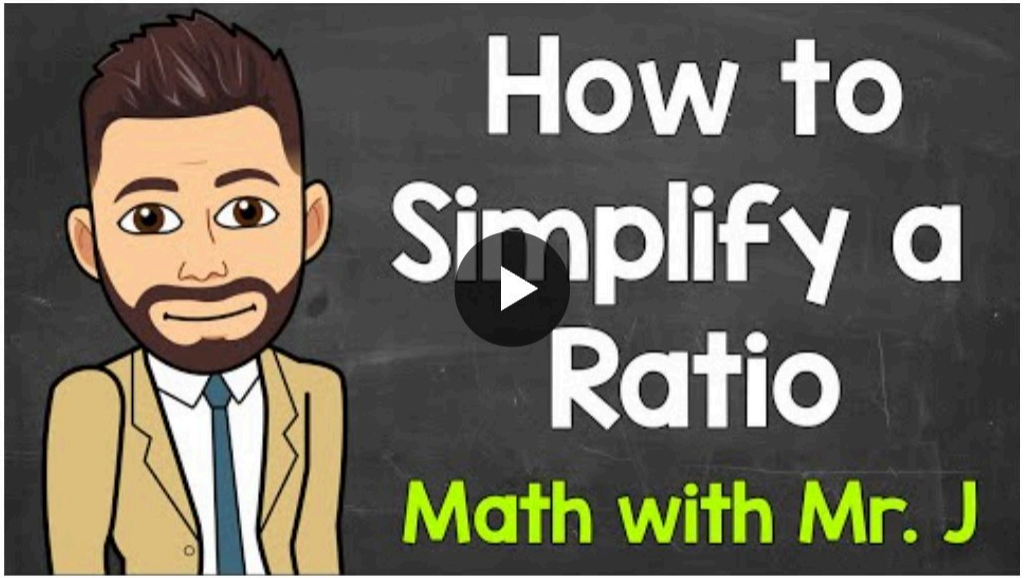
Simplify to Simplest Form

- Divide both sides by the same number
- Keep going until nothing else divides both
- Shortcut: divide by highest common factor
- Check: scale back up to match start



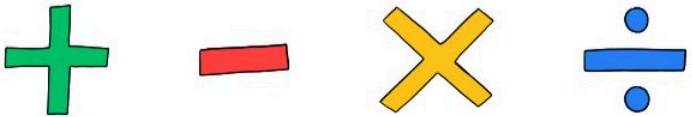
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Simplifying Step by Step



▶ 0:00 – 5:00

- Spot the number that divides both sides
- See 12:18 become 6:9 then 2:3



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$a^2+b^2=c^2$

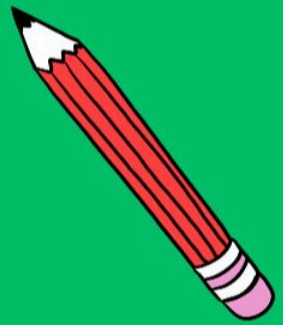
Your task

In pairs, write ratios for classroom items, lengths and money in simplest form.

1. Write each pair as a:b in correct order, no units
2. Use same units first, e.g. change £3 to 300p
3. Simplify using highest common factor and check

10 min

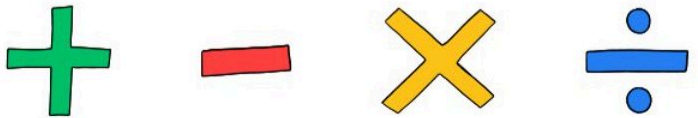
In pairs



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How Simple Can It Go?

- This bracelet has 5 yellow beads and 15 blue beads. The ratio 5:15 simplifies to 1:3.

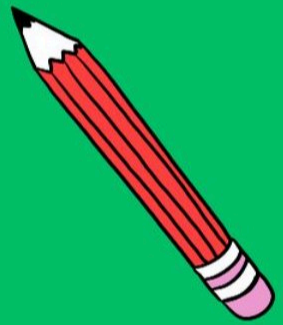


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$a^2+b^2=c^2$

What Trips Us Up?

Which part of ratio notation do you find trickiest?



- **A** Remembering the order
- **B** Finding the highest common factor
- **C** Changing to the same units first
- **D** Knowing when it is simplest

Vote with your hands, then explain why.

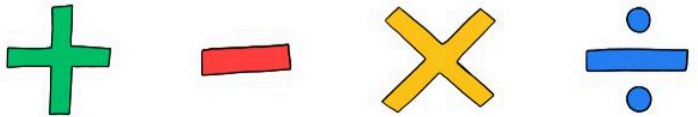
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Exit ticket

1. Write 40:28 in simplest form.

2. One thing I learnt about ratio notation...

3. One question I still have...



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