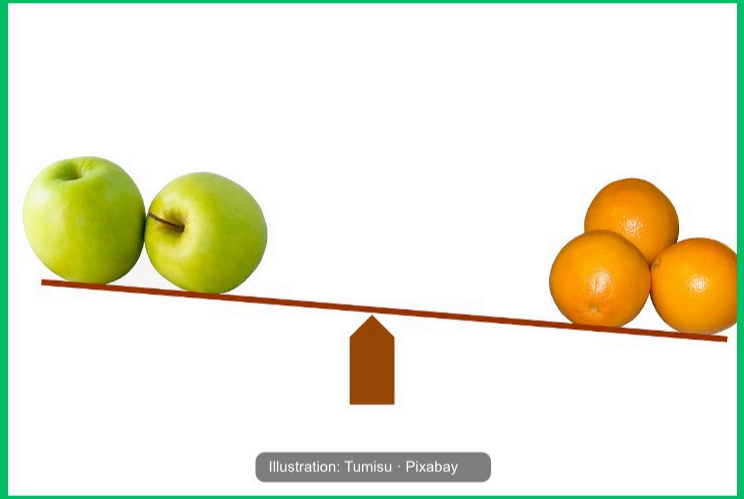
# Solving One-Step Equations

Find the missing number and check it works




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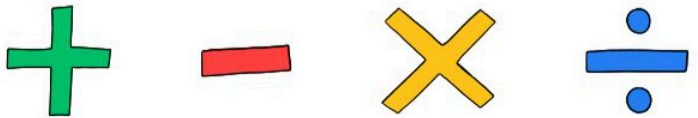
# Today we will...

## WE ARE LEARNING TO

- Write x + p = q and px = q from real problems
- Solve in one step with fractions and decimals

## SUCCESS LOOKS LIKE

- ✓ I can write an equation for a story
- ✓ I can solve and check by substitution





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

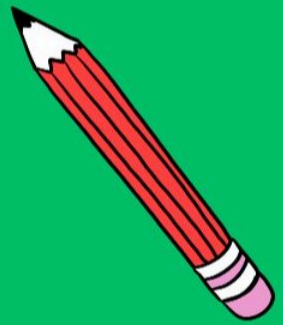
# Same goal, different undo

**x + p = q**

- Something added to x makes q
- Undo with subtraction
- Example: x + 2.5 = 7

**p x = q**

- x multiplied by p makes q
- Undo with division
- Example: 3x = 10.5



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# Where you see them

### Money

Savings plus $4.25 equals $12.00 total.

### Drinks

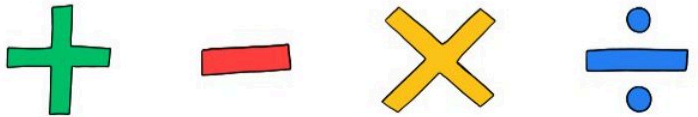
3 bottles hold 4.5 liters in all.

### Length

A board plus 2/3 yard equals 2 yards.

### Pages

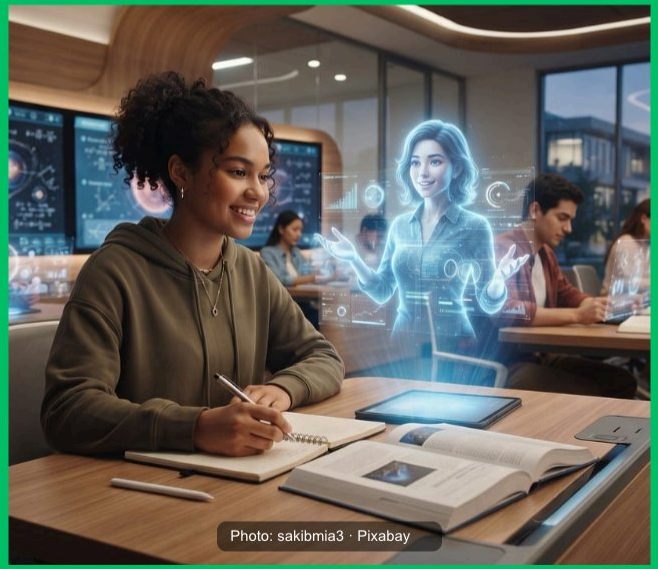
4 equal chapters make 60 pages total.



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

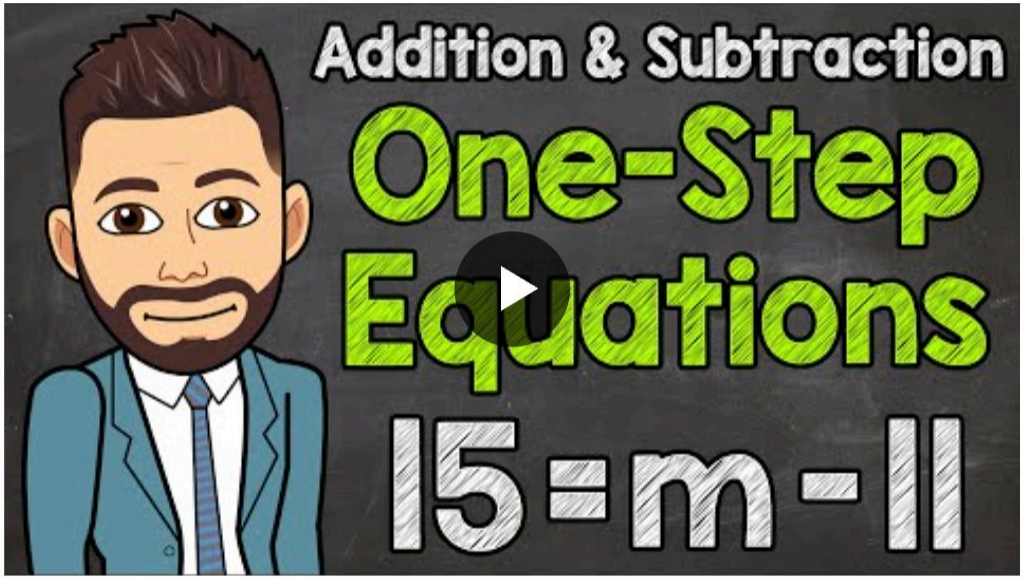
## Think, pair, share

A student had some dollars, got $5 more, and now has $12. How can you find the start without guessing?



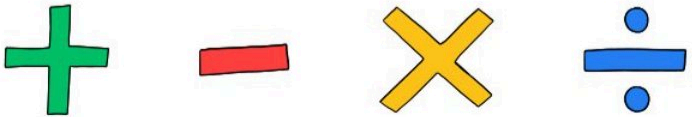

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# Undoing addition and subtraction




▶ 0:00 – 5:00

- Watch how both sides stay balanced
- Listen for why we subtract to isolate x



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

## Key words

**equation**

Two equal amounts joined by =.

**variable**

A letter, like x, for an unknown number.

**inverse operation**

Opposite that undoes, like add and subtract.

**solution**

The x value that makes it true.

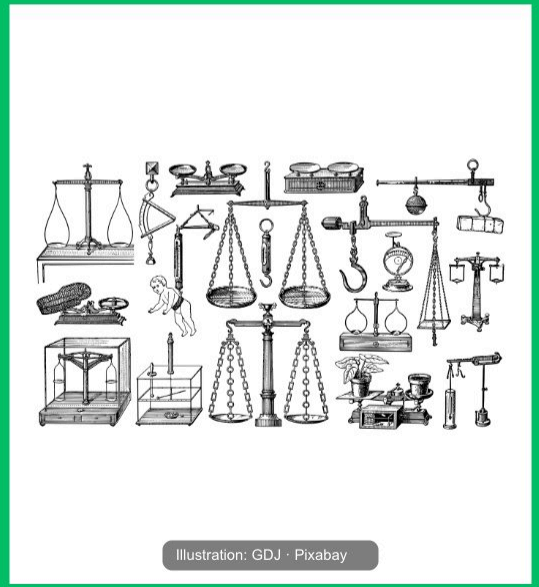
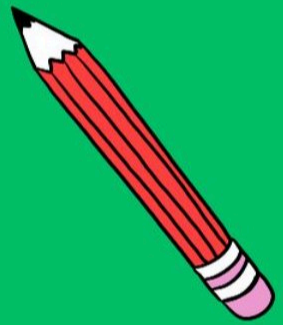
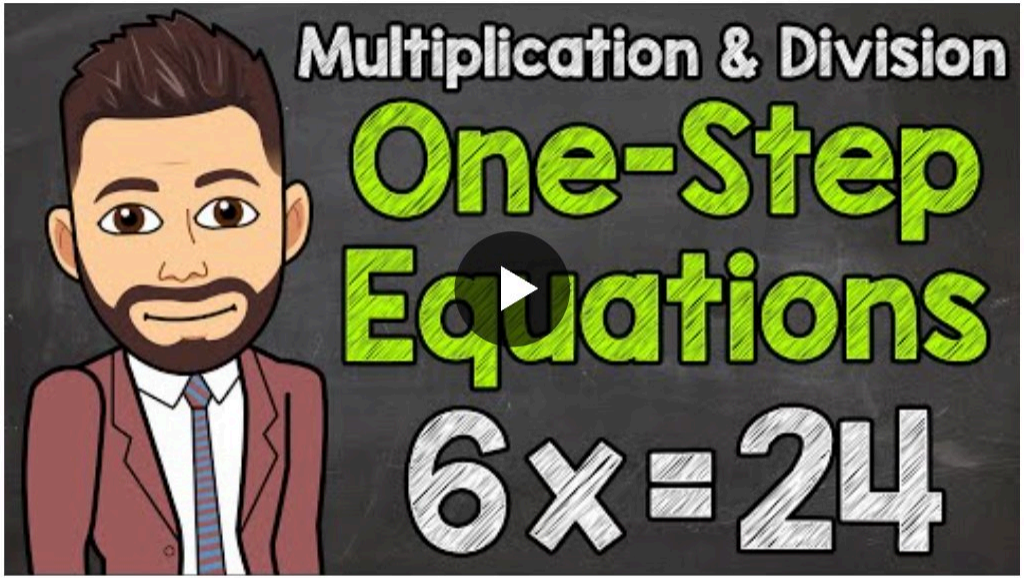


Illustration: GDJ · Pixabay



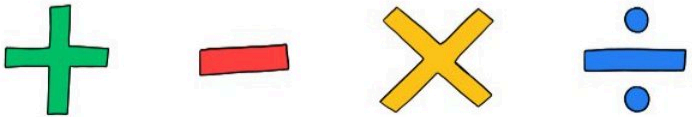
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# Undoing multiplication and division




▶ 0:00 – 5:00

- Watch how dividing both sides isolates x
- Look for fractions and decimals as p and q





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

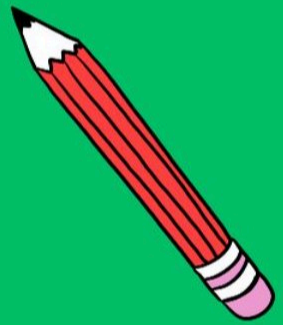
# Your task

**With your partner, write, swap, and solve real-life one-step equations.**

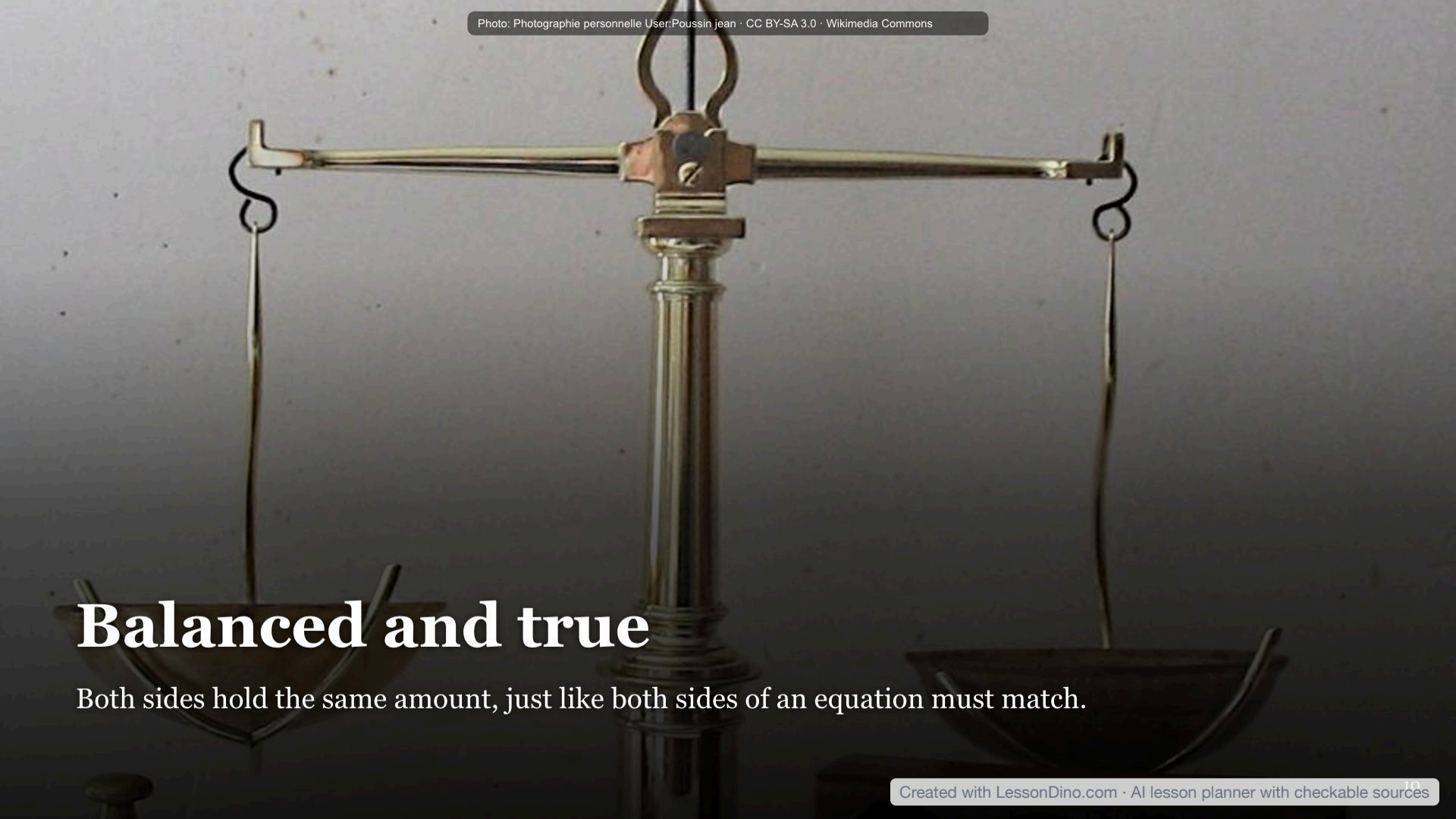
1. Each write 2 stories: one x + p = q, one px = q with decimals or fractions.
2. Swap papers and solve each with one inverse step.
3. Check by putting the answer back in.

**10 min**

**In pairs**



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# Balanced and true

Both sides hold the same amount, just like both sides of an equation must match.



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

## What could this be?

A mix needs 2 1/2 cups total. A student already added 3/4 cup. How much more is needed?





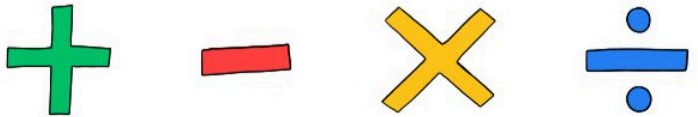

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# Exit ticket

1. Solve: x + 4.5 = 9. Show your check.

2. Write a real story for 4x = 20.

3. One question I still have...





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