Up or Down? Adding and Subtracting Integers

Grade 7 Math - Move it on the number line

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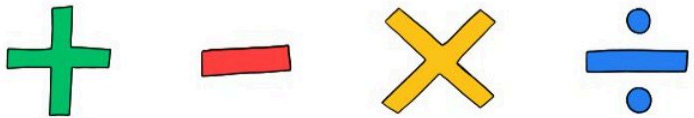
Today we will...

WE ARE LEARNING TO

- Add integers using number lines and absolute value
- Subtract integers by adding the opposite
- Show moves on horizontal and vertical number lines

SUCCESS LOOKS LIKE

- ✓ I can model addition on a number line
- ✓ I can rewrite subtraction as addition correctly
- ✓ I can explain why a number + its opposite = 0



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

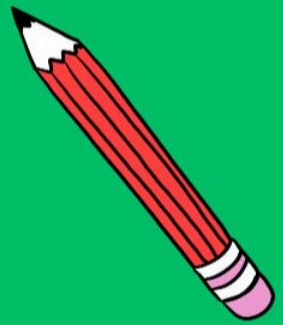
Adding vs. Subtracting

Adding

- Start at the first number
- Positive: move right or up
- Negative: move left or down

Subtracting

- Keep the first number the same
- Change minus to plus
- Add the opposite of second number



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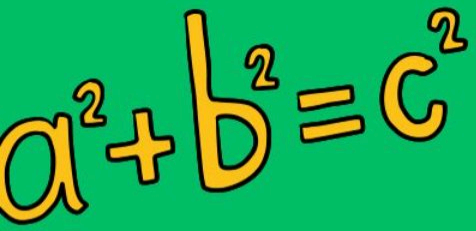


Illustration: RosZie · Pixabay

Where do negatives live?

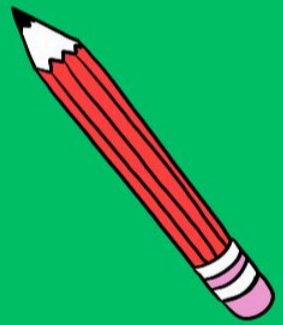
At dawn it was -9°F. By noon it rose 18 degrees to 9°F.

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Which tool clicks for you?

Which model helps you see integer moves best?

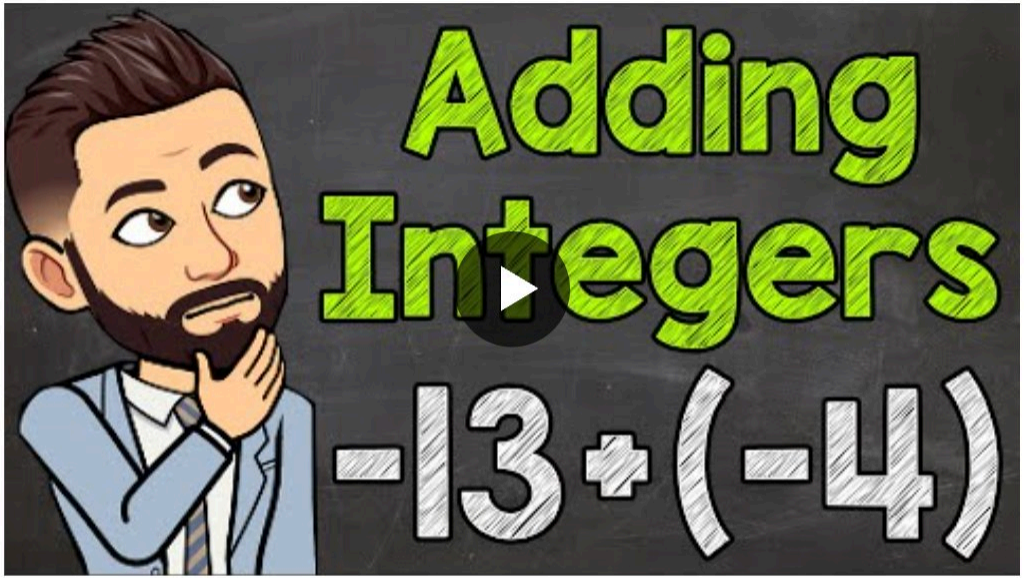


- **A** Horizontal number line
- **B** Vertical number line
- **C** Plus/minus chips that cancel

Vote with your hands, then explain why.

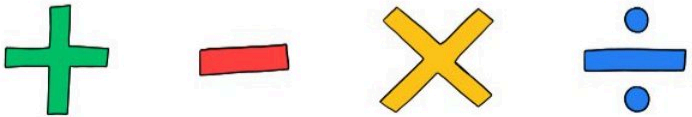
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Watch: Adding integers



▶ 0:00 – 5:00

- Watch where each arrow starts and ends
- Listen for same sign vs. different signs



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

THE POWER OF ZERO

0

a number plus its opposite

5 + (-5) makes a zero pair and cancels out completely.

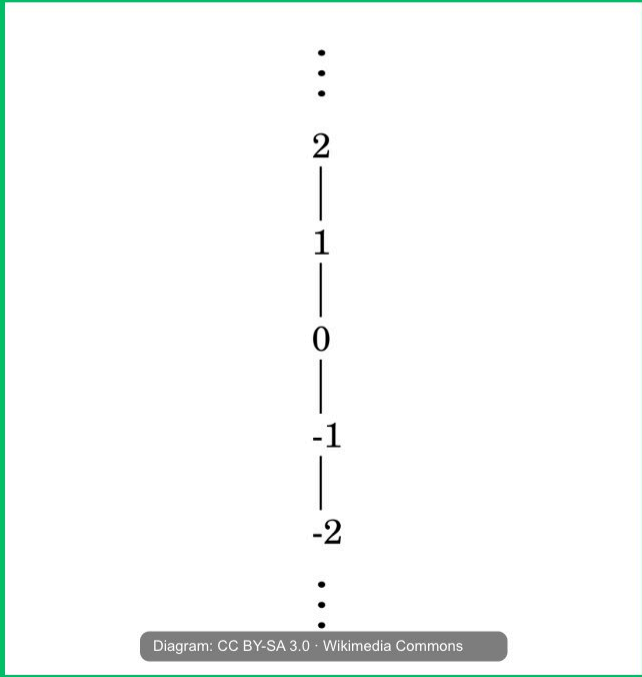
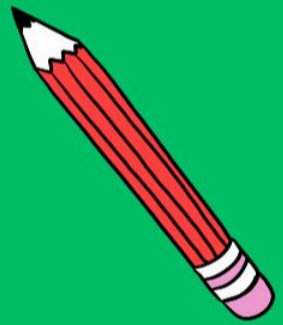
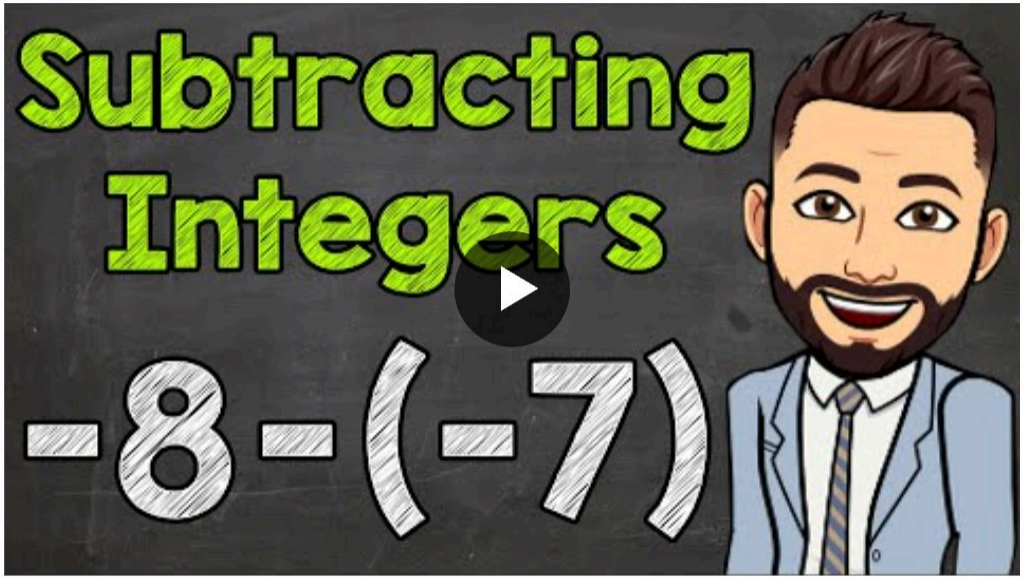


Diagram: CC BY-SA 3.0 · Wikimedia Commons



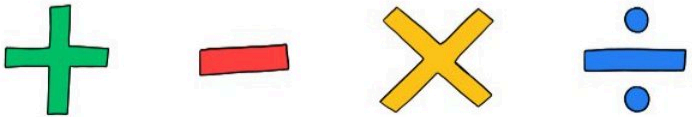
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Watch: Subtracting integers



▶ 0:00 – 3:20

- Watch keep-change-change to addition
- Track which way the arrow now moves



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

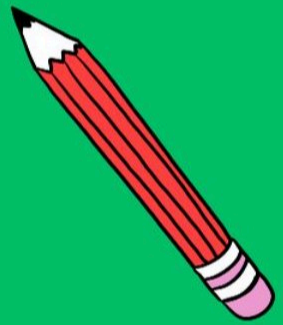
Your task

In pairs, solve 5+(-3), -4+(-6), 8-12, 6-(-4), -5-3, -2-(-5) and draw each move on a number line.

1. Start at first number on -10 to 10 line
2. Draw arrow for second number move
3. Write sum and check with partner

15 min

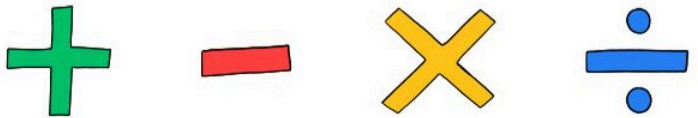
In pairs



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Rules that always work

1. Same signs: add absolute values, keep the sign
2. Different signs: subtract absolute values, keep sign of larger absolute value
3. Minus a number: add its opposite instead



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

Think, pair, share

Why does 4 - (-6) = 10 and not -2? Show it two ways.

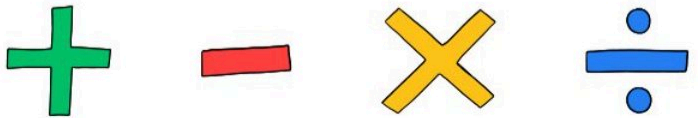




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Quick quiz

1. -5 + 8 = ?
2. -4 + (-6) = ?
3. 8 - 12 = ?
4. 6 - (-4) = ?



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