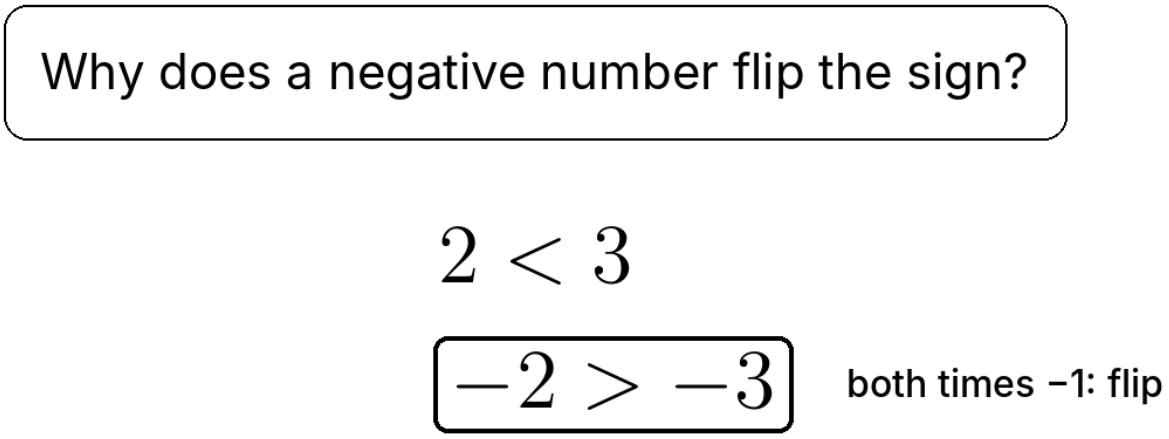
Flip the Sign

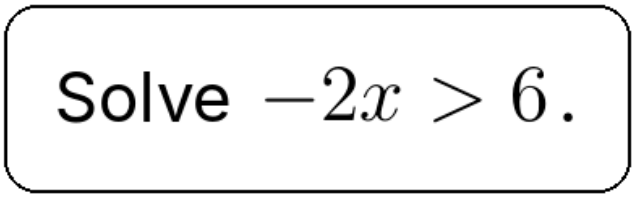
IN03-V1 · storyboard · IN03 Multiply and divide: a negative flips the sign. Read each picture with its sentences.

Picture 1



1. Why does multiplying by a negative number flip the sign?
2. 2 is less than 3.
3. Multiply both by negative 1: negative 2 is greater than negative 3.
4. Multiplying by negative 1 is a mirror at 0, so the order flips.

Picture 2



$x < -3$ divide by −2: flip

Check: $x = -4: \quad 8 > 6$ ✓

5. Solve negative 2 x is greater than 6.
6. Divide both sides by negative 2, and flip the sign: x is less than negative 3.
7. Check with x equals negative 4: negative 2 times negative 4 is 8, and 8 is greater than 6.

Picture 3

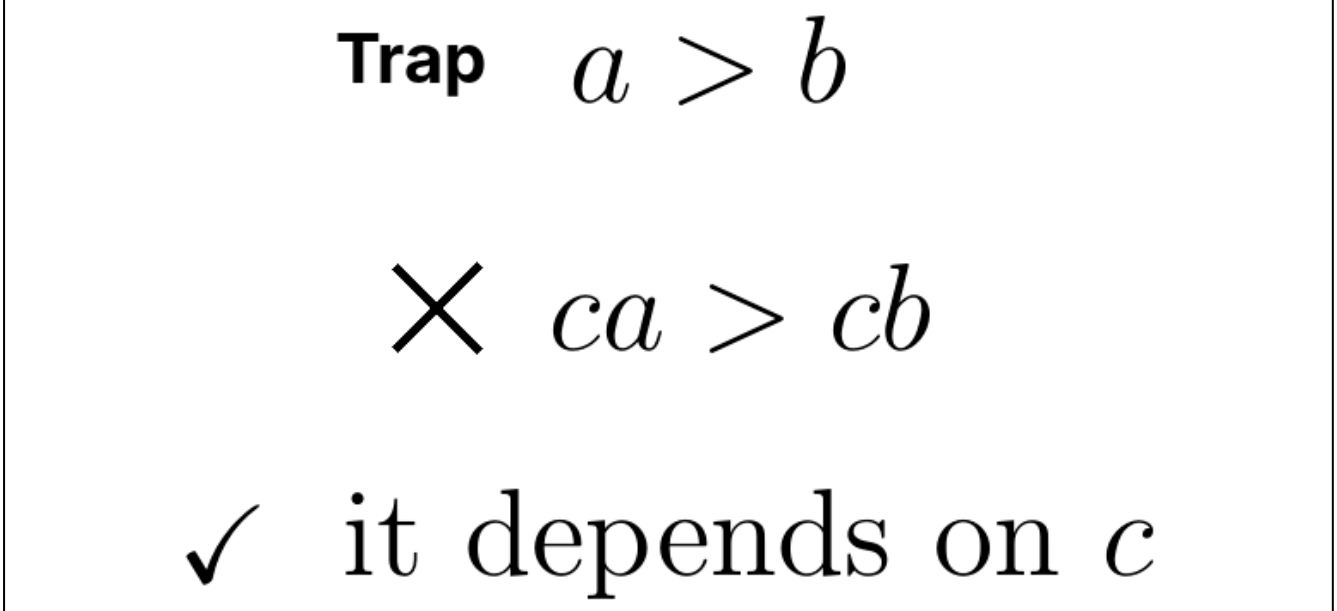
Trap $2x < -6$

$\times \quad x > -3$

$\checkmark \quad x < -3$

8. Watch for the trap: in 2 x is less than negative 6, there is a negative number on the right, but you divide by 2, which is positive.
9. So keep the sign: x is less than negative 3.

Picture 4



10. Another trap: from a greater than b, you can't say c a is greater than c b.
11. You don't know the sign of c: if c is negative, the sign flips, and if c is 0, they are equal.