Unit 6 Lesson 9: Dealing with Negative Numbers

1 Which One Doesn't Belong: Rational Number Arithmetic (Warm up)

Student Task Statement

Which equation doesn't belong?

$15 = -5 \cdot -3$

$4 - -2 = 6$

$2 + -5 = -3$

$-3 \cdot -4 = -12$

2 Old and New Ways to Solve

Student Task Statement

Solve each equation. Be prepared to explain your reasoning.

1. $x + 6 = 4$
2. $x - -4 = -6$
3. $2(x - 1) = -200$
4. $2x + -3 = -23$

3 Keeping It True

Student Task Statement

Here are some equations that all have the same solution.

$$\begin{aligned} x &= -6 \\ x - 3 &= -9 \\ -9 &= x - 3 \\ 900 &= -100(x - 3) \\ 900 &= (x - 3) \cdot (-100) \\ 900 &= -100x + 300 \end{aligned}$$

1. Explain how you know that each equation has the same solution as the previous equation. Pause for discussion before moving to the next question.
2. Keep your work secret from your partner. Start with the equation $-5 = x$. Do the same thing to each side at least three times to create an equation that has the same solution as the starting equation. Write the equation you ended up with on a slip of paper, and trade equations with your partner.
3. See if you can figure out what steps they used to transform $-5 = x$ into their equation. When you think you know, check with them to see if you are right.