# 4-5: Learning Goals

- Let's solve linear equations.

# 4-5-1: Equation Talk


1. $5-x=8$
2. $-1=x-2$
3. $-3x=9$
4. $-10=-5x$

# 4-5-2: Trading Moves

Your teacher will give you 4 cards, each with an equation.

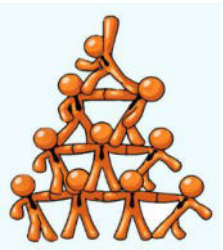
1. With your partner, select a card and choose who will take the first turn.
2. During your turn, decide what the next move to solve the equation should be, explain your choice to your partner, and then write it down once you both agree. Switch roles for the next move. This continues until the equation is solved.
3. Choose a second equation to solve in the same way, trading the card back and forth after each move.
4. For the last two equations, choose one each to solve and then trade with your partner when you finish to check one another's work.

# 4-5-3: Make Your Own Steps

Tyler says he invented a number puzzle. He asks Clare to pick a number, and then asks her to do the following:

- Triple the number
- Subtract 7
- Double the result
- Subtract 22
- Divide by 6

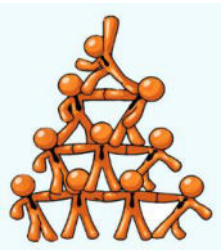
Clare says she now has a -3. Tyler says her original number must have been a 3. How did Tyler know that? Explain or show your reasoning. Be prepared to share your reasoning with the class.



# 4-5: Lesson Synthesis

When solving equations ...

- different approaches for different structures of equations
- types of errors to look out for



# 4-5: Learning Targets

- I can solve an equation where the variables appears on both sides.

# 4-5-4: Check It

Noah wanted to check his solution of $x = \frac{14}{5}$ for the equation $\frac{1}{2}(7x - 6) = 6x - 10$. Substituting $\frac{14}{5}$ for $x$, he writes the following:

$$\frac{1}{2}\left(7\left(\frac{14}{5}\right) - 6\right) = 6\left(\frac{14}{5}\right) - 10$$

$$\left(7\left(\frac{14}{5}\right) - 6\right) = 12\left(\frac{14}{5}\right) - 20$$

$$5\left(7\left(\frac{14}{5}\right) - 6\right) = 5\left(12\left(\frac{14}{5}\right) - 20\right)$$

$$7 \cdot 14 - 6 = 12 \cdot 14 - 20$$

$$98 - 6 = 168 - 20$$

$$92 = 148$$

Find the incorrect step in Noah's work and explain why it is incorrect.