

# Off the Line

Let's study solutions and non-solutions.

## 15.1 Estimate: Coin Weight



How much does a nickel weigh?

1. Record an estimate that is:

too low	about right	too high

2. Explain your reasoning.

## 15.2

## Row Game: Equations

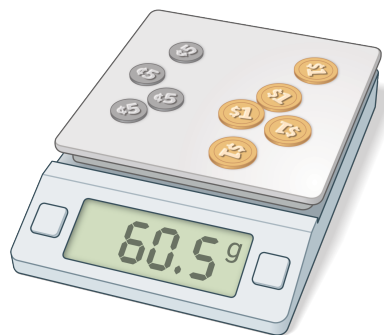
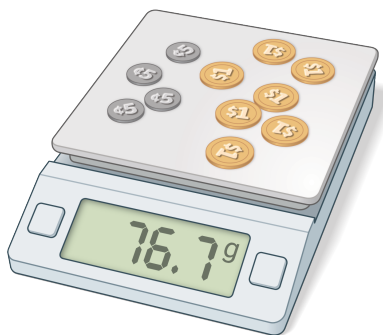
Work independently on your column. Partner A completes the questions in column A only and partner B completes the questions in column B only. Your answers in each row should match. Work on one row at a time, and check whether your answer matches your partner's before moving on. If you don't get the same answer, work together to find any mistakes.

Solve each equation for  $x$ .

row	column A	column B
1	$3x - 1 = 5$	$6x - 2 = 10$
2	$4(x + 1) = 3x - 12$	$4x + 4 = 3(x - 4)$
3	$14x + 10 = 4x + 6$	$7x + 5 = 2x + 3$
4	$6x + 3 = 33$	$4x + 2 = 22$
5	$4x + 5y = 2 - 4x + 5y$	$4x + 9y = 2 + 9y - 4x$
6	$2x + 6y = 10$	$5x + 15y = 25$

## 15.3 What Were They Thinking?

Read each student's reasoning, and answer the questions.



Jada says, "I know 4 nickels and 7 dollar coins weigh 76.7 grams. I know 4 nickels and 5 dollar coins weigh 60.5 grams. Here's what else I can figure out based on that:

- 2 dollar coins weigh 16.2 grams.
- 1 dollar coin weighs 8.1 grams.
- 5 dollar coins weigh 40.5 grams.
- 4 nickels weigh 20 grams.
- 1 nickel weighs 5 grams."

1. How did Jada figure out that 2 dollar coins weigh 16.2 grams?
2. Why might Jada have done that step first?
3. After Jada figured out how much 1 dollar coin weighed, why did she calculate how much 5 dollar coins weighed?
4. Once Jada knew how much 5 dollar coins weighed, how did she figure out how much 4 nickels weighed?



Priya says, "I know 9 plastic bricks and 3 number cubes weigh 39 grams, and 7 plastic bricks and 6 number cubes weigh 50.5 grams. Here's what I can figure out based on that:

- The weight of 18 plastic bricks and 6 number cubes is 78 grams.
- The weight of 11 plastic bricks is 27.5 grams.
- The weight of 1 plastic brick is 2.5 grams.
- The weight of 9 plastic bricks is 22.5 grams.
- The weight of 3 number cubes is 16.5 grams.
- The weight of 1 number cube is 5.5 grams."

1. Why is Priya's second step only about plastic bricks, not number cubes?
2. How does it help Priya to have a statement that's just about plastic bricks, and not number cubes?
3. Why might Priya have started by finding the weight of 18 plastic bricks and 6 number cubes?
4. After Priya figured out how much 1 plastic brick weighed, why did she calculate how much 9 plastic bricks weighed?