Situations and Equations
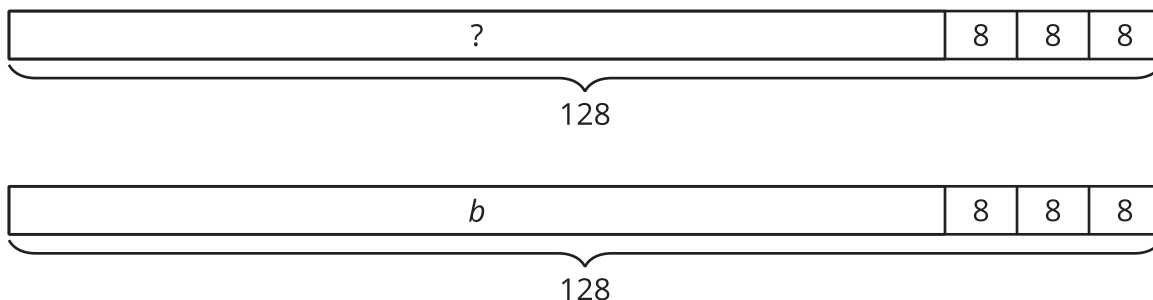
Let's represent and solve problems.

Warm-up

Notice and Wonder: The Unknown

What do you notice? What do you wonder?

Mai's Beads

In this problem, each situation has an unknown quantity. In the diagrams and in the equations, each unknown quantity is represented by the letter *n*.
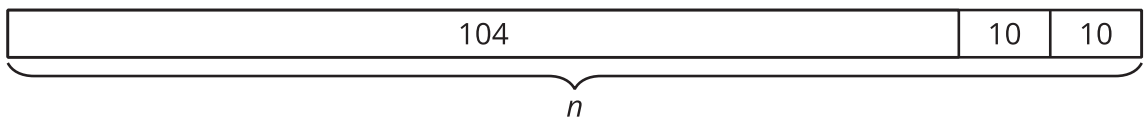
Part A

Match each diagram with a situation. Be ready to explain your reasoning.

- Situation 1: Mai had 104 beads. She buys 2 packs of beads. Now she has 124 beads. How many beads were in each pack?

- Situation 2: Mai had some beads. She buys 2 packs of beads. Each pack has 10 beads in it. Now she has 124 beads. How many beads did Mai have before she bought the packs?

- Situation 3: Mai had 104 beads. She buys 2 packs of beads. Each pack has 10 beads in it. How many beads does Mai have now?
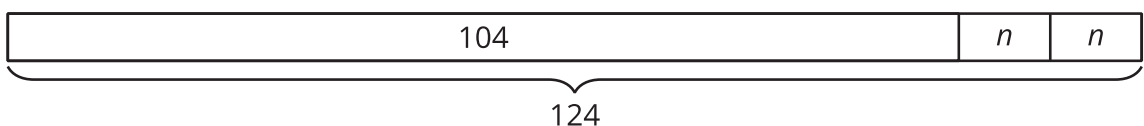
A

| *n* | 10 | 10 |

124

B

| 104 | 10 | 10 |

n

C

| 104 | *n* | *n* |

124
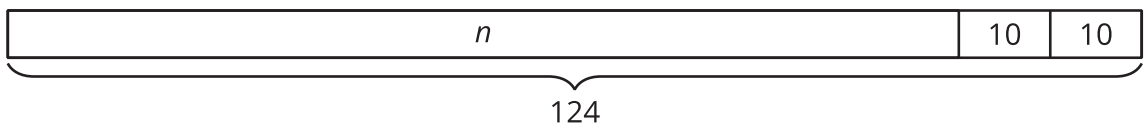
Part B

Match each equation with a situation in Part A.

1. $104 + 2 \times 10 = n$

2. $104 + (2 \times n) = 124$

3. $n + 10 + 10 = 124$

Represent, Solve, Explain

Kiran is setting up a game of mancala (mahn-KAH-lah). He has a jar of 122 stones.

From the jar, he takes 3 stones to put in each of the 6 pits on his side of the board.

How many stones are in the jar now?

1. Write an equation to represent the situation. Use a letter for the unknown quantity.

2. Solve the problem. Explain or show your reasoning.

3. Explain how you know your answer makes sense.