You can use cups and counters to model solving multiplication and division equations. You can also solve an equation with paper and pencil by undoing what has been done.

**Solving Multiplication and Division Equations**

- You need to get the variable by itself on one side of the equation by undoing what has been done to the variable.
- Ask yourself, “what do I need to do to undo what has been done to this variable?”
- Divide to undo multiplication. Multiply to undo division.
- Do the same to each side of the equation.

**EXAMPLES**

A  Solve $8y = 24$.

\[
8y = 24 \quad \text{To get } y \text{ alone, you must undo multiplying by 8.}
\]

\[
8y = 24 \quad \text{Divide to undo the multiplication.}
\]

\[
\frac{8y}{8} = \frac{24}{8} \quad \text{Divide each side by 8.}
\]

\[
y = 3
\]

\[
8(3) = 24 \checkmark \quad \text{Check by replacing } y \text{ with 3.}
\]

B  Find the value of $n$ if $\frac{2}{3}n = 10$.

\[
\frac{2}{3}n = 10 \quad \text{To get } n \text{ alone, you must undo multiplying by } \frac{2}{3}.
\]

\[
\frac{2}{3}n = 10 \quad \text{Divide each side by } \frac{2}{3}, \text{ which is the same as multiplying by the reciprocal, } \frac{3}{2}.
\]

\[
\frac{3}{2}(\frac{2}{3}n) = \frac{3}{2}(10) \quad \text{Reciprocals multiply to 1.}
\]

\[
n = 15
\]

\[
\frac{2}{3}(15) = 10 \checkmark \quad \text{Check by replacing } n \text{ with 15.}
\]

**Try These Together**

1. Solve $2.7p = -10.8$.

   *HINT:* Divide each side by 2.7.

2. Solve $\frac{1}{6}q = 5$.

   *HINT:* Multiply each side by 6.

**PRACTICE**

Solve each equation. Use cups and counters if necessary.

3. $3b = 9$
4. $2g = 10$
5. $16 = 2x$
6. $5q = 25$
7. $54 = 6r$
8. $15 = 1p$
9. $24 = 8k$
10. $10r = 40$

11. **Standardized Test Practice**  Jalisa has to take 3 teaspoons of medicine for her cold every day until the medicine is gone. If there are 33 teaspoons of medicine in the bottle, how many days will she have to take medicine?

   *A* 11  *B* 9  *C* 10  *D* 12

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