

Using Multiplicative Inverse (5-6)

<i>multiplicative inverse</i>	Decode mul · ti · pli · ca · tive in · verse
Definition a type of reciprocal used to balance equations	Example $\frac{2}{3} \rightarrow \frac{3}{2}$

Multiplicative Inverse Property	
The ^x product of a number and its multiplicative inverse is always 1.	$\frac{2}{5} \times \frac{5}{2} = 1$

Example 1: Solve a one-step equation.

I Do	We Do
$\frac{14}{6} \cdot \frac{16}{1} x = \frac{21}{1} \cdot \frac{7}{2}$ $1x = \frac{49}{2}$ $x = 24\frac{1}{2}$	$-\frac{11}{3} \cdot \frac{55}{1} = \frac{13}{1} x \cdot \frac{11}{3}$ $-\frac{605}{3} = x$ $-201\frac{2}{3} = x$

Example 2: Solve the two-step equation.

I Do	We Do
$\frac{-5}{6}x + \frac{3}{4} = \frac{7}{8} - \frac{3}{4}$ $\frac{-5}{6}x = \frac{1}{8} - \frac{3}{4}$ $\frac{-5}{6}x = \frac{1}{8} - \frac{6}{8}$ $\frac{-5}{6}x = \frac{-5}{8}$ $x = \frac{-3}{20}$	$\frac{1}{5}x + \frac{2}{8} = \frac{4}{15} + \frac{2}{3}$ $\frac{1}{5}x = \frac{4}{15} + \frac{10}{15}$ $\frac{1}{5}x = \frac{14}{15}$ $x = \frac{14}{3}$ $x = 4\frac{2}{3}$

Example 3: Use what you know about fractions to solve.

I Do

You plant a begonia that is 4 inches tall. It grows $\frac{1}{8}$ inch per day. How tall will it be after 30 days?

$$4 + \frac{1}{8} \cdot 30$$

$$4 + \frac{9}{8} \cdot \frac{30}{1}$$

$$4 + \frac{135}{8}$$

$$4 + 33\frac{3}{4}$$

$$37\frac{3}{4} \text{ inches}$$