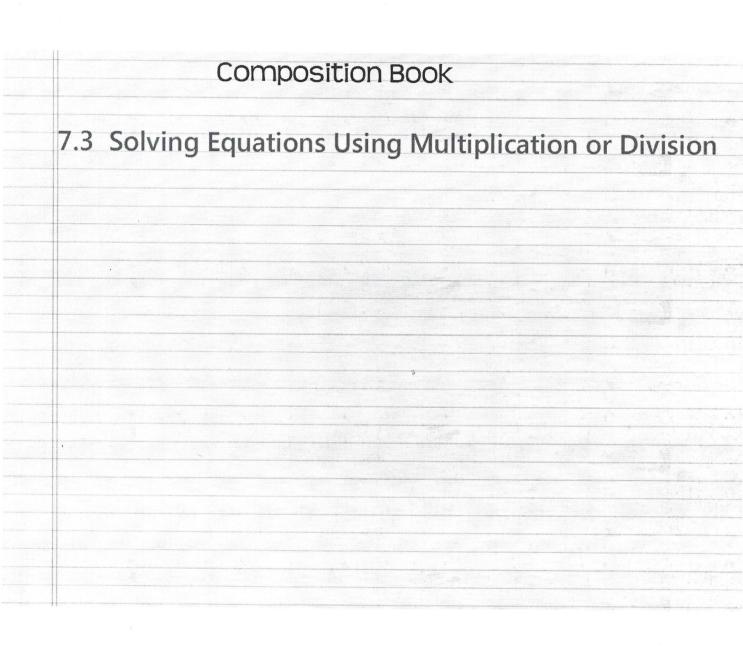
Chapter 7	Equations and Inequalities
Date:	7.3 Solving Equations Using Multiplication or Division
Essential Question	How can you use multiplication or division to solve an equation?
Key Idea	Multiplication Property of Equality  Words When you multiply each side of an equation by the same nonzero number, the two sides remain equal.  Numbers $\frac{8}{4} = 2$ Algebra $\frac{x}{4} = 2$ $\frac{8}{4} \cdot 4 = 2 \cdot 4$ $\frac{x}{4} \cdot 4 = 2 \cdot 4$ $x = 8$ Multiplicative Inverse Property  Words The product of a nonzero number $n$ and its reciprocal, $\frac{1}{n}$ , is 1.  Numbers $5 \cdot \frac{1}{5} = 1$ Algebra $n \cdot \frac{1}{n} = \frac{1}{n} \cdot n = 1, n \neq 0$



1) Solve.

$$\frac{W}{4} = 12$$

$$4 \cdot \frac{W}{4} = 12 \cdot 4$$

$$W = 48$$

$$\frac{2}{7}X = 6$$

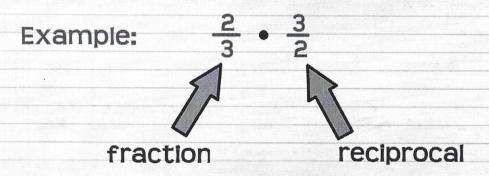
$$\frac{7}{2} \cdot \frac{2}{7} X = 6 \cdot \frac{7}{2}$$

$$\frac{\cancel{7}}{\cancel{2}} \cdot \frac{\cancel{2}}{\cancel{7}} \times = \cancel{6}' \cdot \frac{\cancel{7}}{\cancel{2}_1}$$

Look at your notes page.



To cancel a fraction multiply by its reciprocal.



Complete numbers 1 - 4 on your notes page.

Solve.

1) 
$$5 \cdot 6 = \frac{t}{5} \cdot 5$$

$$30 = t$$

$$2) \quad 2 \cdot \frac{x}{2} = 9 \cdot 2$$

$$x = 18$$

$$3) \frac{\cancel{4}}{\cancel{3}} \cdot \frac{\cancel{3}}{\cancel{4}} y = \cancel{3} \cdot \frac{4}{\cancel{3}}$$

$$y = 12$$

4) 
$$\frac{3}{2} \cdot \frac{3}{2} m = 10 \cdot \frac{3}{2}$$

$$m = 15$$

## Look at your notes page.



## **Division Property of Equality**

Words When you divide each side of an equation by the same nonzero number, the two sides remain equal.

Numbers

$$8 * 4 = 32$$

Algebra 
$$4x = 32$$

$$8 \cdot 4 \div 4 = 32 \div 4$$

$$\frac{4x}{4} = \frac{32}{4}$$

$$8 = 8$$

$$x = 8$$