

3.4a Solving Equations using Multiplication/Division

Multiplication Property of Equality - multiplying the same # to each side of an equation produces an equivalent equation

i.e.  $a = b$   
 $a \cdot c = b \cdot c$

Division Property of Equality - dividing each side of an equation by the same # produces an equivalent equation

i.e.  $a = b$   
 $\frac{a}{c} = \frac{b}{c} ; c \neq 0$

Ex. 1  $\frac{x}{3} = -6 \cdot 3$   
 $x = -18$   
 $\frac{-18}{3} = -6$   
 $-6 = -6$

Ex. 2  $18 = -4y$   
 $\frac{18}{-4} = \frac{-4y}{-4}$   
 $-\frac{9}{2} = y$   
 $18 = -4(-\frac{9}{2})$   
 $18 = 18$

Ex. 3  $\frac{4}{3}x = -8$   
 $x = -8 \cdot \frac{3}{4}$  (Keep, change, flip)  
 $x = -6$   
 $\frac{4}{3}(-6) = -8$   
 $-8 = -8$

Ex. 4  $3 = -1.5n$   
 $\frac{3}{-1.5} = \frac{-1.5n}{-1.5}$   
 $-2 = n$   
 $-1.5(3) = 0$   
 $-4.5 = 0$   
 $3 = -1.5(-2)$   
 $3 = 3$

HW: p. 106 #3-10, 11-23 odd, 28, 34, 35