

Pg 81; 1-5; 13-33 (0): pg. 82, 37-49 (0)

1) B 2) 0 3) A 4) C (41) 10

5)  $-5+9=4$  (43) 0

13) 7 15) C 17) B (45) 5

19) -6 21) -11 23) -4 (47) 4

25) 6 27) 7 29) 11 (49)  $-2\frac{4}{7}$

31) 3 33) -31

(37) commutative property

(39) property of opposites

Pg. 89-90; 15-53 (0)

15) 9 31) -1 45)  $-6.5, -7.5, -8.5, -9.5$

17) -11 33) 31 47)  $-2\frac{1}{2}, -1\frac{1}{2}, -\frac{1}{2}, \frac{1}{2}$

19) 39 35) -43 49)  $-x, -7$

21) 36 37) 10.2 51)  $9, -28x$

23) 9.2 39) 1 53)  $a, -5$

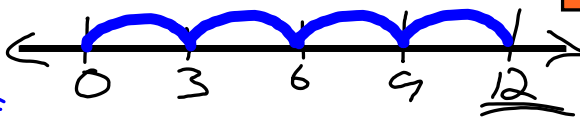
25) -1.2 41)  $1\frac{1}{10}$

27) 3 43) 14, 13, 12, 11

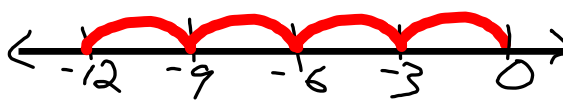
29)  $-4\frac{1}{2}$

2.5. Multiplying  
Real Numbers

Sept. 27, 2006

$$3 \cdot 4 = \underline{\underline{12}}$$
A number line starting at 0 and ending at 12. Tick marks are at 0, 3, 6, 9, and 12. Four blue arcs are drawn above the line, each starting from a tick mark and ending at the next one to the right: from 0 to 3, 3 to 6, 6 to 9, and 9 to 12. The number 12 at the end of the line is underlined.

$$3 \cdot 4 \cdot 5 = \underline{\underline{60}}$$

$$-3 \cdot 4 = \underline{\underline{-12}}$$
A number line starting at 0 and ending at -12. Tick marks are at 0, -3, -6, -9, and -12. Four red arcs are drawn above the line, each starting from a tick mark and ending at the next one to the left: from 0 to -3, -3 to -6, -6 to -9, and -9 to -12. The number -12 at the end of the line is underlined.

$$-3 \cdot -4 = \underline{\underline{12}}$$

$$-(- (3 \cdot 4)) \uparrow$$

$$-3 \cdot -4 \cdot -2 = \underline{\underline{-24}}$$

## The Rule

- A product is Negative, if it has an odd Number of Negative factors.
- A product is Positive, if it has an even Number of Negative factors.

$$\text{ex1)} \quad -4(5) = \underline{\underline{-20}}$$

$$\text{ex2)} \quad -2(5)(-3) = \underline{\underline{30}}$$

$$\text{ex3)} \quad -10(-2)(-4) = \underline{\underline{-80}}$$

$$\begin{aligned} \text{ex4)} \quad (-2)^4 &= (-2)(-2)(-2)(-2) \\ &= \underline{\underline{16}} \end{aligned}$$

# Products w/ Variable Factors

Simplify : No Grouping Symbols

$$\text{ex1)} \quad -2(-x) = \underline{\underline{2x}}$$

$$\text{ex2)} \quad 4(-n)(-n)(-n) = \underline{\underline{-4n^3}}$$

$$\text{ex3)} \quad -1(-a)^2 = -1(-a)(-a) = \underline{\underline{-1a^2}}$$

$$\begin{aligned} \text{ex4)} \quad -7(-b)^3 &= -7(-b)(-b)(-b) \\ &= \underline{\underline{7b^3}} \end{aligned}$$

ex5

$$2x \cdot -1(-a) = \underline{\underline{2ax}}$$

ex6

$$-4(x)^2 \cdot -5x \cdot -2x = \underline{\underline{-40x^4}}$$

# Evaluate

$-4(-1)(-x)$  when  $x = \underline{-5}$   
1<sup>st</sup> way:

$$-4(-1)(-x) = -4(-1)(-(-5)) = \underline{\underline{20}}$$

2<sup>nd</sup> way

$$-4(-1)(-x) = -4x = -4(-5) = \underline{\underline{20}}$$

O.T.L.

① pg 94: Blue Box: "Prop. of Multi"  
in your N.B.

② Pg 96-97: 17-45(0), 55

\*for #55 you may need  
to use ex 4 on pg 95 for help.