M8 - 8.1 - Adding/Subtracting Number Line Notes
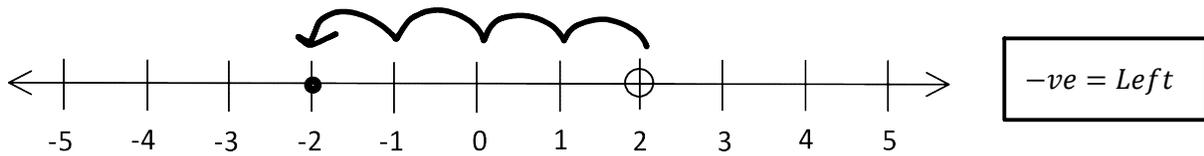
Number line
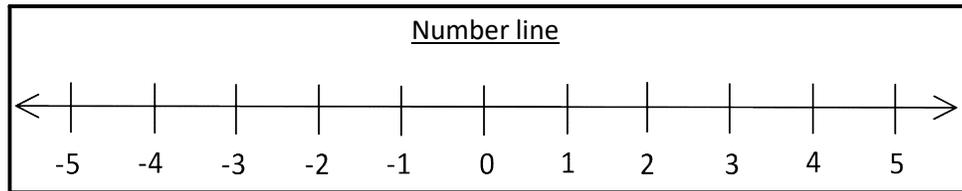
$$2 - 4 =$$

$2 \longrightarrow$ starting point, place pen on 2 ○
$- \longrightarrow$ "left," move left
$4 \longrightarrow$ move left 4

$-ve = Left$

$2 - 4 = \boxed{-2}$ Check on Calculator!

$$2 + 3 =$$

$2 \longrightarrow$ starting point, place pen on 2 ○
$+ \longrightarrow$ "right," move right
$3 \longrightarrow$ move right 3

$+ve = Right$
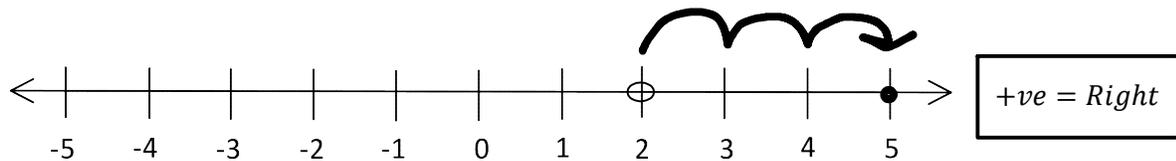
$2 + 3 = \boxed{5}$ Check on Calculator!

Same Plus

$5 + (+2)$
$5 \oplus \! +2$
↓
$5 + 2$

Same Plus

⑦ Check on Calculator!

$7 - (-4)$
$7 \ominus \! -4$
↓
$7 + 4$

Same Plus

⑪ Check on Calculator!

Different Minus

$10 + (-3)$
$10 \oplus \! -3$
↓
$10 - 3$

Different Minus

⑦ Check on Calculator!

$-2 + (-3)$
$-2 \oplus \! -3$
↓
$-2 - 3$

Different Minus

$\boxed{-5}$ Check on Calculator!

If you have two of the same sign side-by-side it becomes a positive sign.

If you have two different signs side-by-side it becomes negative

After that use the number line! $*-2 - 2 \neq 4 = -4$

M8 - 8.2 - ×÷ Same Plus, Different Minus Notes

If you multiply or divide numbers with two of the same sign we follow the rule "Same Plus."

$3 \times 3 =$
$+3 \times +3 =$ $(+9)$

"Same plus"

"Same plus" $<$ $\dfrac{-9}{-3} =$
$\dfrac{-9}{-3} =$ $(+3)$

Same Plus

$$+ \times + = +$$
$$- \times - = +$$
$$+ \div + = +$$
$$- \div - = +$$

"Same plus"

If you multiply or divide numbers with two different signs we follow the rule "Different Minus."

$3 \times -3 =$
$+3 \times -3 =$ (-9)

"Different minus"

"Different minus" $<$ $\dfrac{-9}{3} =$
$\dfrac{-9}{+3} =$ (-3)

Different Minus

$$+ \times - = -$$
$$- \times + = -$$
$$+ \div - = -$$
$$- \div + = -$$

"Different minus"

Don't forget about signs side-by-side!

M8 - 8.3 - BEDMAS: Order of Operations Notes

B - brackets

Brackets first

E - exponents

Exponents second

D - division

Division

M - multiplication

Multiplication

A - addition

Addition

S - subtraction

Subtraction

} In order from left to right

$3 \times 4 + 2 =$
$12 + 2 = 14$

Multiply first
Add second

$10 - 4 \div 2 =$
$10 - 2 = 8$

Divide first
Subtract second

Multiply the number on the base the number of times of the exponent

Exponent
$2^3 = 2 \times 2 \times 2 = 8$
Base

$2^3 + 4 =$
$\boxed{2^3} + 4 = \longrightarrow$
$8 + 4 = 12$

Exponents first
Addition second

Check on Calculator!

$2(3 + 4)^2 =$
$2(7)^2 =$
$2\,\boxed{7}^2 = \longrightarrow$ $7^2 = 7 \times 7 = 49$
$2(49) = 98$

Brackets first
Exponents second
Multiply third

$2 - 3 + 4 =$
$-1 + 4 = 3$

Subtraction First
Addition Second

Do side work Off to the Right