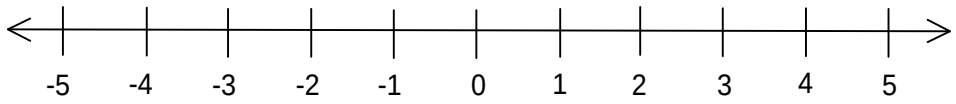
M8 - 8.1 - + – Numbers

Number line



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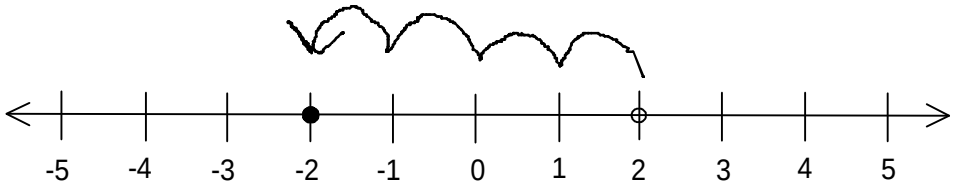
2 – 4 =

2 ⟶ starting point, place pen on 2 ○
– ⟶ "left," move left
4 ⟶ move left 4



2 – 4 = –2

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2 + 3 =

2 ⟶ starting point, place pen on 2 ○
+ ⟶ "right," move right
3 ⟶ move right 3

2 + 3 = 5

M8 - 8.2 - ++− − Notes (Same Plus, Different Minus)

$$4 = +4 = \underset{\text{"Same plus"}}{+\,+4} = \underset{\text{"Same plus"}}{+(4)\;+\,+4} = \underset{\text{"Same plus"}}{+(+4)\;+\,+4}$$

$$= +4 = +4 = +4$$

Notice: 4, $+4$,$+\ +4$, $+(4)$, $+(+4)$ all equal $+4$. Two same signs side by side follow the rule same plus.

$$\underset{\text{"Same plus"}}{-\,-4} = \underset{\text{"Same plus"}}{-(-4)\;-\,-4}$$

$$+4 = +4$$

Notice: Two same signs side by side follow the rule same plus.

$$-4 = \underset{\text{"Different minus"}}{+\,-4} = \underset{\text{"Different minus"}}{-\,+4} = \underset{\text{"Different minus"}}{+(-4)\;+\,-4} = \underset{\text{"Different minus"}}{-(+4)\;-\,+4}$$

$$= -4 = -4 = -4 = -4$$

Notice:-4, $+\ -4$,$-\ +4$, $+(-4)$, $-(+4)$ all equal -4. Two different signs side by side follow the rule different minus.

*$-2 - 2 \neq 4 = -4$

M8 - 8.3 - × ÷ Same Plus, Different Minus Notes

$3 \times 3 =$
$+3 \times +3 = 9$

"Same plus"

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

"Different minus"

"Same plus" $\frac{-9}{-3} =$ $\frac{-9}{-3} = 3$

"Different minus" $\frac{-9}{3} =$ $\frac{-9}{+3} = -3$

Notice: when multiplying or dividing numbers with the same sign we follow the rule "Same plus."

Notice: when multiplying or dividing numbers with a different sign we follow the rule "Different minus."

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

"Same plus"

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

"Different minus"

M8 - 8.4 - BEDMAS: Order of Operations Notes

B - brackets

E - exponents

D - division

M - multiplication

A - addition

S - subtraction

Brackets first

Exponents second

Division

Multiplication

Addition

Subtraction

In order from left to right

1. $3 \times 4 + 2 =$
   $12 + 2 = 14$

Multiply first
Add second

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

Divide first
Subtract second

3. $2^3 + 4 =$
   $8 + 4 = 12$

Exponents first
Addition second

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

4. $2(3 + 4)^2 =$
   $2(7)^2 =$
   $2(49) = 98$

Brackets first
Exponents second
Multiply third

$7^2 = 7 \times 7 = 49$

5. $2 - 3 + 4 =$
   $1 + 4 = 5$

Subtraction First
Addition Second