

+ Operations on Integers Dec 2, 2020  
 (+ and - whole numbers)  
 ex 2  
 ex not 2.5

Subtraction of 2 Integers with 2 adjacent negative signs  
 (right beside/touching)

i. ex.  $-2 - (-5)$  or ii.  $-2 - 5$

Evaluate

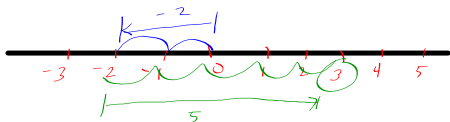
$$-2 - (-5)$$

$$-2 + 5 = 3$$

step i. Rewrite as Addition by evaluating the signs

B  
E  
D  
M  
A  
S

|             |   |     |
|-------------|---|-----|
| Law of sign |   |     |
| +           | + | = + |
| +           | - | = - |
| -           | + | = - |
| -           | - | = + |



step ii. Add the two integers using number line. Do 3.1

Subtraction of 2 Integers with one minus sign Inbetween 2 Integers

i.  $-3 + 1$

ii.  $-2 - 5$

Evaluate

$-2 - 5$

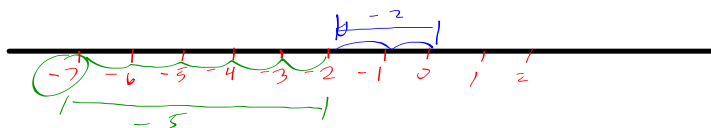
$-2 + (-5)$

$-7$

step i. rewrite as addition by expanding the minus sign

|             |   |   |   |
|-------------|---|---|---|
| law of sign |   |   |   |
| +           | + | = | + |
| +           | - | = | - |
| -           | + | = | - |
| -           | - | = | + |

for adjacent signs



step ii. add 2 numbers using number line.

Do Ex 3.2

### Understanding Multiplication

Multiplication is a concise way of adding the same number a certain amount of times.

$$0.25 + 0.25 + 0.25 = 3 \cdot 0.25 = 0.75$$

$$2 + 2 + 2 = 3 \cdot 2 = 3 \times 2 = 3(2) = 6$$

$$\underbrace{4 + 4 + 4 + \dots + 4}_{10 \text{ times}} = 10 \cdot 4 = 10 \times 4 = 10(4) = 40$$

Youssef makes a 2\$ bet 3 times.

He loses.

$$-2 + (-2) + (-2) = 3(-2) = 3 \times (-2) = -6$$

$$x + x + x = 3x$$

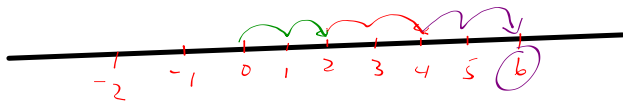
$$y + y = 2y$$

Multiplication of 2 Positive Integers  
of 1 pos / 1 negative

evaluate

$$3(2) = 6$$

$$2 + 2 + 2 = 6$$



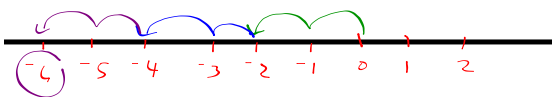
step i. Rewrite the multiplication as addition.

step ii. Add the #'s using the # line

evaluate

$$3(-2) = -6$$

$$-2 + (-2) + (-2) = -6$$



| law of signs |   |   |     |
|--------------|---|---|-----|
| +            | x | + | = + |
| +            | x | - | = - |
| -            | x | + | = - |
| -            | x | - | = + |

Multiplication of 2 Negative Integers

"A double negative"  $-2 \times (-2)$

↳ ~~to~~ to be avoided  
in math and  
in english  
because it's  
confusing

I do not not like her.

"I like her"

It's not true that I wasn't careful!  $- - = +$

"I was careful"

ex  $-2 \times -2 = 2 \times 2 = 4$

ex  $-1 \times (-3) = 1 \times 3 = 3$

ex.

$-3 \times -2$

$= 3 \times 2$

$= 2 + 2 + 2 = 6$

