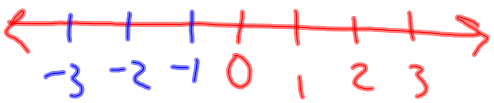
2-1 integers and number line

integer: number without any decimal part



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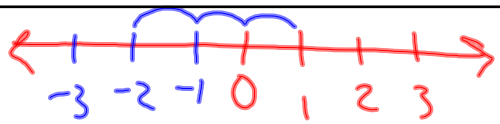

$3 - 1 = 2$

$1 + 2 = 3$

$1 - 3 = -2$

$1 + (-3) = -2$

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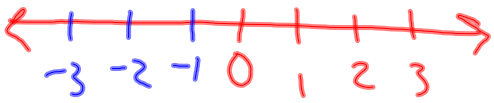

$3 - 1 = 2$

$1 - 3 = -2$

absolute value = distance on number line

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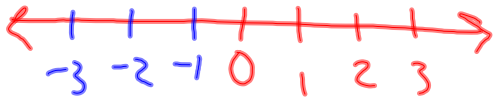

$|3 - 1| = 2$

$|1 - 3| = 2$

absolute value = distance on number line

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$|x| = ?$ distance to origin (0 on # line)

$x = 6$

$|x| = 6$

$x = -6$

$|x| = 6$

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pg 31 # 35) $|10| + |-10|$

$10 + 10$

20

#42) $|12 - x|$ $x = 6$

$|12 - 6|$

$|6|$

6

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2-2 real numbers

$\sqrt{-6}$

$\sqrt{6}$

real ≡ real

real nums = { rational numbers + irrational numbers

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rational numbers = ratio of 2 integers

$\frac{37}{8}$

4.625

46.25

462.5

$\left(\frac{4625}{1000}\right)$

any decimal that terminates is a rational number

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6.2 $\frac{62}{10}$

-41.6 $-\frac{416}{10}$

2.1413 $\frac{21413}{10000}$

0.0006 $\frac{6}{1000}$

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$.3333\ldots = .3\overline{3}$

$10x = 3.3333\ldots = 3.3\overline{3}$

$-(x = .3333\ldots = .3\overline{3})$

$9x = 3$

$\frac{9x}{9} = \frac{3}{9}$

$x = \frac{3}{9} = \frac{1}{3}$

any repeating decimal is a rational number

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irrational numbers

nonterminating, non-repeating decimals

$\pi = 3.14159265\ldots$

$e = 2.7182818284590\ldots$

$\sqrt{2} = 1.141\ldots$

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$.999\ldots = 1$

$10x = 9.99\ldots$

$x = .99\ldots$

$9x = 9$

$x = 1$

$.888\ldots \neq .9$

$.8889$

$.89 > .8\overline{8}$

$.89 < .9$

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2.4 properties of addition of real numbers.

$-a$ "opposite of a"

let $a = -6$

$-(-6) = +6$

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$-a$ is additive inverse of a

$-a + a = 0$ ← identity element

$(0 + x) = x$

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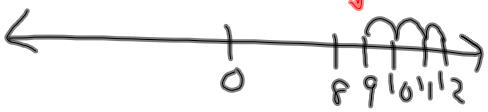
2.5 subtracting real numbers

$a - b = a + (-b)$

subtracting = adding the additive inverse (opposite)

$12 - 3 = 12 + (-3)$



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$7 - 3 = 4$

$3 - 7 = -4$

$-6 + 8 = +2$

$-21 + 18 = -3$

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$7 + 3 = 10$

$-7 - 3 = -10$

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2-6 multiplying real numbers

$x \cdot \frac{1}{x} = 1$ ← multiplicitive identity

↑ multiplicitive inverse

$(1 \cdot x) = x$

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same signs ⇒ positive result

$6 \cdot 4 = 24$

$(-6)\cdot(-4) = 24$

opposite signs ⇒ negative result

$(-6)(4) = -24$

$(6)(-4) = -24$

$(-1)(6)(4)$

$(6)(4)(4)$

Jul 6-3:00 PM

odd number of neg signs ⇒ neg result

$(-2)(6)(-3)(4)(-1) = -144$

$(-2)(6)(3)(4)(-1) = +144$

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$\left(\frac{4}{5}\right)\left(-\frac{2}{3}\right)$

$-\frac{(4)(2)}{(5)(3)} \Rightarrow -\frac{8}{15}$

#17

$(-2^3)(-5)$

$(-2)(-2)(-2)(-5)$

$+40$

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ch 1: p 24:
3,9,11,13,21,25,33,35,37

Ch 2: p 60:
7,9,11,15,17,21,23,27,29,33,35,37,
39,43,45

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