

TSW review numbers and their operations.

Real numbers consists of ALL numbers (positive, negative, and zero.)

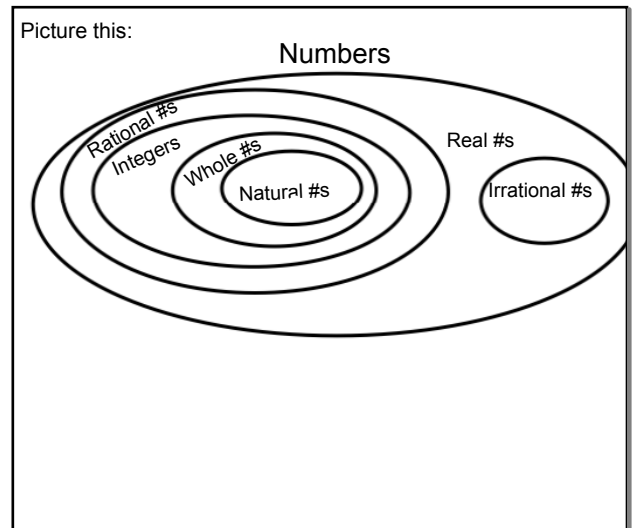
Integers are the set  $\{ \dots -3, -2, -1, 0, 1, 2, 3, \dots \}$

whole numbers is the set  $\{0, 1, 2, 3, \dots\}$

Natural numbers is the set  $\{1, 2, 3, \dots\}$

Rational numbers can be written as a ratio of two numbers. Some examples are  $0.333, \frac{2}{3}, 0.75$ .

Irrational numbers cannot be written as a ratio of two numbers. Some examples are  $\pi, \sqrt{2}$ .



Rules for Adding and Subtracting:

$6 + 2 =$   
 $2 + 6 =$   
 $-6 + -2 =$   
 $-2 + -6 =$

} Add and keep the sign

The Commutative property allows us to add numbers in any order. This does not hold true for subtraction.

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$6 - 2 = 4$                        $2 - 6 = -4$   
 (Big#) - (Little#) = Positive#    (Little#) - (Big #) = Negative#

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Subtraction is the same as adding a negative #

$6 + -2 = 4$                        $6 - 2 = 4$   
 Subtracting a negative is the same as addition  
 $6 \overset{+}{-} 2 = 8$                        $6 + 2 = 8$

Circle the ones that equal 4. Draw a box around the ones that equal -4. Draw a triangle around the ones that equal 8. Highlight the ones that equal 8.

$6 - 2$	$2 \overset{-}{+} 6$	$-6 \overset{-}{+} 2$
$6 \overset{+}{-} 2$	$2 - 6$	$-6 - 2$
$-2 + 6$	$-6 + 2$	$-2 \overset{-}{+} 6$
$-2 - 6$	$2 \overset{+}{-} 6$	$6 \overset{-}{+} 2$

Always change double negatives to addition.  
Adding a negative is the same as subtraction.

Rules for Multiplying and Dividing:

$$(6)(2) = 12 \quad (2)(6) = 12 \quad (+)(+) = +$$

$$(-6)(-2) = 12 \quad (-2)(-6) = 12 \quad (-)(-) = +$$

$$(-2)(6) = -12 \quad (2)(-6) = -12 \quad (+)(-) = -$$

$$(-)(+) = -$$

The Commutative property allows us to multiply numbers in any order. This does not hold true for division.

$$6 \div 2 = 3 \quad 2 \div 6 = \frac{1}{3} \quad (+)\div(+)=+$$

$$-6 \div -2 = 3 \quad -2 \div -6 = \frac{1}{3} \quad (-)\div(-)=+$$

$$-6 \div 2 = -3 \quad 6 \div -2 = -3 \quad (-)\div(+)= -$$

$$(+)\div(-)= -$$

Questions?

Are whole numbers real numbers?

Are irrational numbers integers?

What property allows us to add or multiply numbers in any order?

Plus a negative is the same as subtraction.

$$8 + -6$$

Subtract a negative is the same as addition.

$$8 - (-6)$$

Same Sign? Add and keep the sign

$$8 + 6$$

$$-8 + -6$$

Different Signs? Subtract and take the sign of the larger absolute value.

$$-8 + 6$$

$$8 + -6$$