1.0

OPERATIONS WITH POSTIVE AND NEGATIVE NUMBERS

Adding Integers without a number line

-3 + -5 =

-1 + -3 =

-6 + -2 =

-9+ -14 =

-12 + -8 =

SAME SIGN
- Ignore the signs
- Add numbers
- Put sign back

Adding Integers without a number line

-3 + 5 =

-1 + 6 =

-5 + 9=

5 + -7 =

8 + -6 =

14 + -18 =

DIFFERENT SIGNS
- Ignore the signs
- Subtract
- Put sign back of number that "looks" the biggest

Example 1

Find the sum of the following:

$a)\ -5.3+(-4.9)$

$b)\ -12.2+19.3$

Practice

Find the sum of the following:

3) $-9+(-3.4)$

4) $0.25+(-5.9)$

Examples

Find the sum of the following:

5) $3\frac{3}{8}+\left(-5\frac{2}{3}\right)$

DIFFERENT SIGNS
- Ignore the signs
- Subtract
- Put sign back of number that "looks" the biggest

Subtraction is the same as adding the opposite

1. Change the minus sign to addition
2. Change the second number into the opposite
3. Do the problem like a regular addition problem

5 – 7

3 – (-7)

-3 – 6

-5 – (-9)

Examples

Simplify the following:

a) $-7-(-5)$

b) $-2-6$

c) $64-(-13)$

d) $17-29$

Examples

Simplify the following:

$e) -3.59-(-50) =$

$f) 18.2-56.7 =$

Examples

Simplify the following:

$g) \frac{7}{3}-\frac{11}{3}$

$h) -\frac{4}{9}-\frac{5}{12}$

RULES FOR MULTIPLYING INTEGERS

Multiply numbers like regular multiplication… however…

POSITIVE X POSITIVE = POSITIVE
POSITIVE X NEGATIVE = NEGATIVE
NEGATIVE X POSITIVE = NEGATIVE
NEGATIVE x NEGATIVE = POSITIVE

1) 2×-3

2) -5×4

3) -3×-7

4) -8×3

5) -6×-5

6) 12×-4

7) -1×-15

8) $3\times-2\times-4$

9) $-5\times-8\times-2$

PRACTICE

10) $-2(3.5)(-4)$

11) $\frac{1}{4}(-12)(3)$

Reciprocals

WHERE DOES THE NEGATIVE GO?

$$-\frac{1}{6}$$

$$= \frac{-1}{6} \qquad = \frac{1}{-6}$$

Reciprocals

ANOTHER NAME IS THE MULTIPLICATIVE INVERSE

FIND THE RECIPROCALS OF THE FOLLOWING:

1) $\frac{3}{5}$

2) 6

3) $2\frac{3}{4}$

4) $-1\frac{2}{3}$

RULES FOR DIVIDING INTEGERS

Divide numbers like regular division… however…

POSITIVE ÷ POSITIVE = POSITIVE
POSITIVE ÷ NEGATIVE = NEGATIVE
NEGATIVE ÷ POSITIVE = NEGATIVE
NEGATIVE ÷ NEGATIVE = POSITIVE

1) $8 \div -4$

2) $-20 \div 4$

3) $-21 \div -7$

4) $-36 \div 3$

EXAMPLES

a) $-16 \div 4$

b) $18 \div (-3)$

EXAMPLES

c) $-20 \div \left(-\frac{5}{3}\right)$

d) $-16 \div \frac{8}{3}$