

**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**

$$1) 2 \times -3$$

$$3) -3 \times -7$$

$$2) -5 \times 4$$

$$4) -8 \times 3$$

$$5) -6 \times -5$$

$$6) 12 \times -4$$

$$7) -1 \times -15$$

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

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

## **PRACTICE**

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

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

# Reciprocals

**WHERE DOES THE NEGATIVE GO?**

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

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

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

# Reciprocals

**ANOTHER NAME IS THE MULTIPLICATIVE INVERSE**

**FIND THE RECIPROCAL OF THE FOLLOWING:**

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

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

2) 6

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

# RULES FOR DIVIDING INTEGERS

Divide numbers like regular division... however...

**POSITIVE  $\div$  POSITIVE = POSITIVE**  
**POSITIVE  $\div$  NEGATIVE = NEGATIVE**  
**NEGATIVE  $\div$  POSITIVE = NEGATIVE**  
**NEGATIVE  $\div$  NEGATIVE = POSITIVE**

$$1) 8 \div -4$$

$$3) -21 \div -7$$

$$2) -20 \div 4$$

$$4) -36 \div 3$$



# **EXAMPLES**

$$a) -16 \div 4$$

$$b) 18 \div (-3)$$

# EXAMPLES

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

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