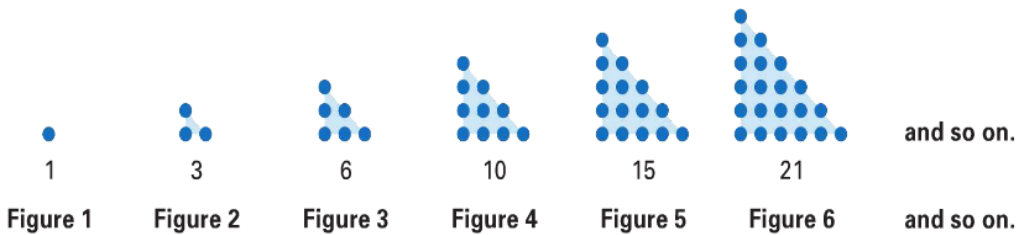


Warm Up

GEOMETRY CONNECTION The diagram shows the first six triangular numbers, 1, 3, 6, 10, 15, 21, which continue on following the same pattern.



- Make an input-output table in which the input is the Figure number n and the output is the corresponding triangular number T .
- Does the table represent a function? Justify your answer.
- Describe the domain and the range.

Yes, function b/c for each input there is only one output

Domain: 1, 2, 3, 4, 5, 6
Range: 1, 3, 6, 10, 15, 21

n	T
1	1
2	3
3	6
4	10
5	15
6	21

Evaluate the expressions:

$$3(x + 6) - 8 \text{ when } x = 5$$

$$3(5 + 6) - 8$$

$$3(11) - 8 = 33 - 8$$

$$= 25$$

$$3x^3 \text{ when } x = 4$$

$$3(4)^3 = 3(64)$$

$$= 192$$

On the top of your paper (by your name) rate yourself for this section:

4 - I can summarize the concepts and explain it to others

3 - I can apply the concept to answer questions correctly

2 - I can apply the concepts but with some mistakes

1 - I need help and know how to apply the concept

0 - I can't apply the concept, even with help

Rating of 0-2 is a warning signal to me that you need help

$$9x$$

$$x > 20$$

$$9 \cdot x$$

$$\left(\frac{a}{5} \right) \quad a=5$$

$$9(x)$$

$$ab < 10$$

2.1 The Real Number Line

- Goals:**
- Graph and compare real numbers using a number line.
 - Find the opposite and the absolute value of a number.

EQ: What does an absolute value represent?

The Unit Organizer		④ BIGGER PICTURE		NAME _____
		Algebra 9/Algebra 9 Concepts		DATE _____
② LAST UNIT/Experience	① CURRENT UNIT	③ NEXT UNIT/Experience		
None	Properties of Real Numbers	Solving Linear Equations		
⑧ Student Activities or Assignments	⑤ UNIT MAP			
2.1 2.2 2.3 2.5 2.6				
⑦ UNIT SELF-TEST QUESTIONS	1. How do you add, subtract, and multiply integers? 2. How do you use the distributive property to evaluate and simplify variable expressions? 3. How do you simplify a variable expression by combining like terms? 4. How can absolute value be used to evaluate expressions?		Simplify Calculate Compare and contrast	
			⑥ UNIT RELATIONSHIPS	

Vocabulary

Opposites: #'s that are the same distance from 0

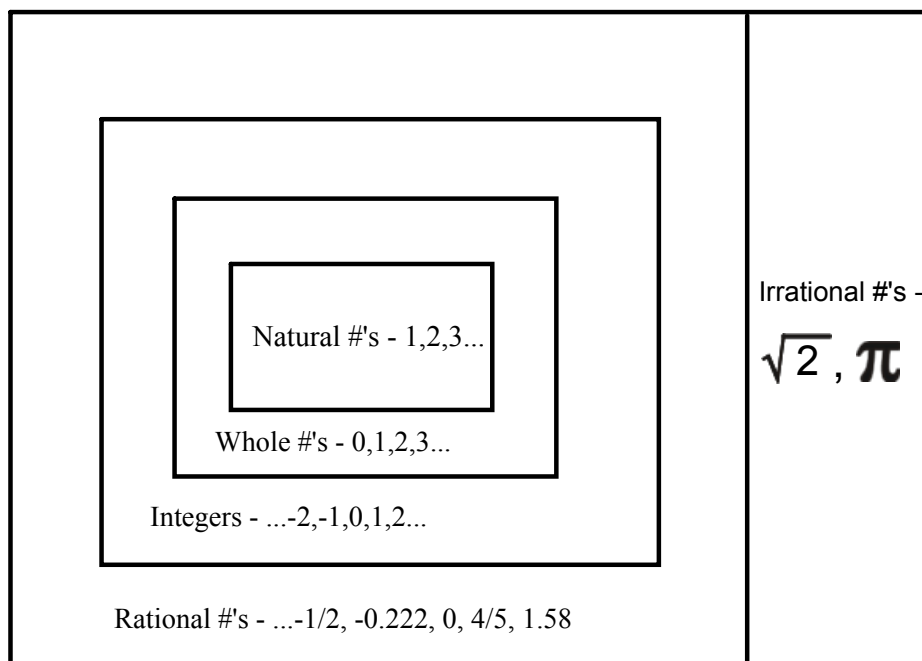
ex: 3 and -3

Absolute value: distance a # is from 0

Always Positive

ex: $|-2| = 2$ $|4| = 4$
 $|0| = 0$

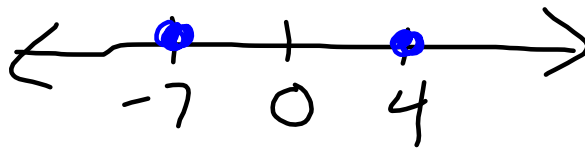
Real Numbers



Graph the numbers on a line. Then write two inequalities that compare the two numbers.

1) -7 and 4

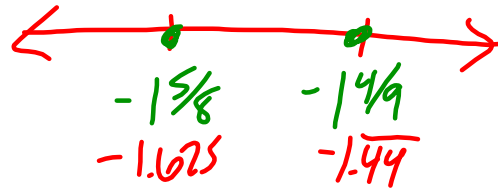
$$\begin{aligned} -7 &< 4 \\ 4 &> -7 \end{aligned}$$



2) $-1\frac{5}{8}$ and $-1\frac{4}{9}$

$$-1.625 \quad -1.\overline{44}$$

$$\begin{aligned} -1\frac{5}{8} &< -1\frac{4}{9} & -1\frac{4}{9} &> -1\frac{5}{8} \end{aligned}$$



3) 6.4 and -2.7



$$\begin{aligned} -2.7 &< 6.4 \\ 6.4 &> -2.7 \end{aligned}$$

Write the numbers in increasing order.

4) -0.04 , $.3$, 3.0 , -0.3 , -0.03

$$-0.3, -0.04, -0.03, .3, 3.0$$

5) $4\frac{1}{2}$, 4.4 , 5.1 , -6 , -6.1 , $-5\frac{1}{2}$

$$4.5$$

$$-5.5$$

$$-6.1, -6, -5\frac{1}{2}, 4.4, 4\frac{1}{2}, 5.1$$

6) 7.03 , -7.08 , -7.11 , -7.02 , 7.07

$$-7.11, -7.08, -7.02, 7.03, 7.07$$

**CONCEPT
SUMMARY****THE ABSOLUTE VALUE OF A NUMBER**

• If a is a positive number, then $|a| = a$.

Example: $|3| = 3$

• If a is zero, then $|a| = 0$.

Example: $|0| = 0$

• If a is a negative number, then $|a| = -a$.

Example: $|-3| = 3$

Evaluate the expression.

a. $|10| = 10$

b. $|2\frac{3}{4}| = 2\frac{3}{4}$

c. $|-16.2| = 16.2$

d. $|-3| = 3$

Use mental math to solve.

e. $|-4.5|$ 4.5

f. $|x| = 3$ $x=3$ or $x=-3$

g. $|x| = -2$ Not Possible

No soln. b/c abs. value never
negative

Try It Use mental math to solve.

7) $|x| = 7$ $x=7$ or $x=-7$

8) $|-x| = 5$ $x=-5$ or $x=5$

9) $|x| = 0$ $x=0$

2.1 Summary

EQ: What does an absolute value represent?

Distance a # is from 0

Homework: Absolute Value wkst

2.1 Homework

~~p. 07 #10-22, 27-30, 33-35, 41-50~~