

# 2.1 True/False Equations and Solution Sets

# NOTES

## ALGEBRA

Write your questions here!



Number Sentence:

Determine the truth values of the following;

Ex 1:

Ex 2:

Ex 3:

Algebraic Equation:

Ex 4:

Ex 5:

Ex 6:

Solution Set:

-

Ex 7:

Verbally:

Graphically:

Set Notation:

Ex 8:

Verbally:

Graphically:

Set Notation:

Set Notation:

Ex 9:

Verbally:

Graphically:

Set Notation:

Ex 10:

YOU TRY:

Verbally:

Verbally:

Graphically:

Graphically:

Set Notation:

Set Notation:

**SMP #3**

**SUMMARY:**

Now,  
summarize  
your notes  
here!



**PRACTICE**

**Directions: Determine whether the following number sentences are true or false.**

1)  $(\sqrt{16})\left(\frac{1}{8}\right) = 0.5^2 + \frac{1}{4}$

2)  $4(12 + 6) = 4(12) + 4(6)$

3)  $\frac{8}{3} = 2.667$

4)  $\pi = 3.14$

**Directions: Circle all numbers that will make the equation TRUE.**

5)  $g^2 - 5 = -4$

-4    -1    0    1    4

6)  $6x - 1 = 11$

-1    2    6    11

7)  $\frac{x}{4} + 6 = 9$

4    8    12    16    20

**Directions: Describe the solution set.**

8)  $f + 1 \neq 4$

Verbally:

Graphically:

Set Notation:

9)  $q - 4 \leq 10$

Verbally:

Graphically:

Set Notation:

10)  $2(x + 3) = 2x + 6$

Verbally:

Graphically:

Set Notation:

11)  $u - 4 = u + 3$

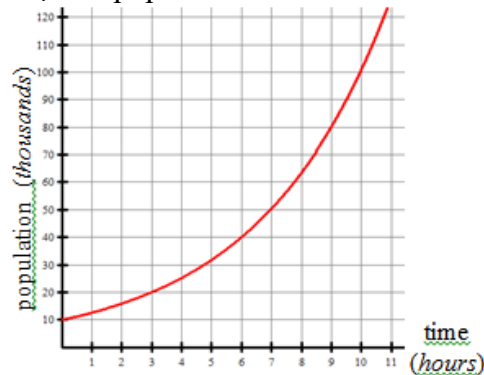
Verbally:

Graphically:

Set Notation:

Use the graph to identify the independent and dependent variable. Fill in the table and answer the questions.

17) The population of a certain bacteria grows over time as shown in the graph below.



Independent Variable

\_\_\_\_\_ = \_\_\_\_\_

Dependent Variable

\_\_\_\_\_ = \_\_\_\_\_

_____	_____
(____)	(____)
3	
6	
	100
	120

a) What population did the bacteria start with?

b) How long does it take for the population of bacteria to double? Justify.

## 2.1 True/False Equations and Solution Sets

## WRAP UP

Directions: Use the following equation to answer the following.  $5 + 2x > 9$

1) What is one value of  $x$  that makes the equation true?

2) Describe the solution set graphically.

3) Describe the solution set with set notation.

**Directions: Make an equation for each of the following situations by using one variable. The variable can be used more than once though. Ex:  $3x + 4 = x$  is fine, but  $3x + 4 = y$  is not.**

- 4) An equation that is always true.
- 5) An equation that is never true.
  
- 6) An equation that is only true when  $b = 2$ .
  
- 7) **The longest side of a triangle must be less than the sum of the other two sides.**

**SMP #2**

**Suppose a triangle is made up of lengths 2 inches, 5 inches and L inches, where L is the longest side.**

- a. Describe the solution set for all possible side lengths for L verbally and graphically.

**Suppose a triangle is made up of lengths 2 inches, 5 inches and L inches, where 5 is the longest side.**

- b. Describe the solution set for all possible side lengths for L verbally and graphically.

**EXIT TICKET –**

- 1) For what value of x is the following equation true?

$$\sqrt{x + 1} = \sqrt{x} + 1$$

-9      -4      -1      0      1      4      9

- 2) Use the following graphical representation of a set of real numbers to answer the following:



- a) Describe this set of real numbers verbally:
- b) Describe this set of real numbers in set notation:
- c) Write an equation or inequality that has the set above as its solution set.