

Chapter 1 § 3

Open Sentences

Definition:

Open Sentences – Mathematical statements with one or more variables, or unknown numbers.

Set – a collection of objects or numbers.

Solution Set – a set of all replacements for the variable that makes the sentence true.

Inequalities - $<$, $=$, $>$, \leq , \geq

Equation – a sentence that contains an equal sign “=”..

Examples:

Replace x with:	$6x + 7 = 37$	True or False?
3	$6(3) + 7 = 37 \rightarrow 25 \neq 37$	False
4	$6(4) + 7 = 37 \rightarrow 31 \neq 37$	False
5	$6(5) + 7 = 37 \rightarrow 37 = 37$	True
6	$6(6) + 7 = 37 \rightarrow 43 \neq 37$	False
	$x = \{ 5 \}$	

Replace y with:

$$Y + 5 \leq 7$$

True or False?

0

$$(0) + 5 \leq 7 \rightarrow 5 \leq 7$$

True

1

$$(1) + 5 \leq 7 \rightarrow 6 \leq 7$$

True

2

$$(2) + 5 \leq 7 \rightarrow 7 \leq 7$$

True

3

$$(3) + 5 \leq 7 \rightarrow 8 \not\leq 7$$

False

4

$$(4) + 5 \leq 7 \rightarrow 9 \not\leq 7$$

False

$$Y = \{ 0, 1, 2 \}$$