

1.1 cont.

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ex1) What is the <sup>truth value</sup> T.V. of ...

$$x + 3 = 12$$

Variables or

We do Not know

Because we do

Not know the

He was the fifteenth Value of the  
President of The U.S.A. Placeholder

if  $x = 9$  then  $x + 3 = 12$  is True.

if  $x = 10$  then  $x + 3 = 12$  is False.

- Open sentence: contains one  
or more Placeholder. T or F?

What is a Variable? Things that change

It is a symbol to rep. Something else!

What can replace a Variable,  
a Number, statement,  
a Domain of Numbers

Box of Domains.

set of Natural #'s  $\Rightarrow \mathbb{N}$   
 $\hookrightarrow \{1, 2, 3, 4, \dots\}$

set of Whole #'s  $\Rightarrow \mathbb{W}$   
 $\hookrightarrow \{0, 1, 2, 3, \dots\}$

set of Integer #'s  $\Rightarrow \mathbb{Z}$   
 $\hookrightarrow \{\dots, -2, -1, 0, 1, 2, \dots\}$

set of Real #'s  $\Rightarrow \mathbb{R}$   
 $\hookrightarrow \{\dots, -2, \dots, -1, \dots, 0, \dots, 1, \dots, 2, \dots\}$

Set of Rational #'s  $\frac{p}{q}$   
 $\left\{ \begin{array}{l} \{\dots, -2, -1, 0, 1, 2, \dots\} \\ \{\dots, -2, -1, 0, 1, 2, \dots\} \end{array} \right\} \frac{\mathbb{Z}}{\mathbb{Z}} \Rightarrow \mathbb{Q}$

O.T.L.

