

NAME: _____

NUMBER: _____

QUIZ over Section 7 in the 'CAT' book; 20 points.

1. (4 pts) (Fill in the blanks.) In general, mathematicians talk about:
EXPRESSIONS being _____.
SENTENCES being _____.

What does it mean for two NUMBERS to be EQUAL?

What does it mean for two SETS to be EQUAL?

2. (6 pts) Fill in the following truth tables:
S1 S2 S1 is equivalent to S2 S1 and S2 S1 or S2

3. (4 pts) Suppose you're told that the compound sentence 'S1 is equivalent to S2' is true. What (if anything) can be said about the truth values of the subsentences S1 and S2?

Suppose you're told that the compound sentence 'S1 iff S2' is true. What (if anything) can be said about the truth values of the subsentences S1 and S2?

Suppose you're told that the compound sentence 'S1 and S2' is false. What (if anything) can be said about the truth values of the subsentences S1 and S2?

Suppose you're told that the compound sentence 'S1 or S2' is false. What (if anything) can be said about the truth values of the subsentences S1 and S2?

4. (4 pts) TRUE or FALSE:
T F For all real numbers x , $2x - 3 = 7$ is equivalent to $x = 5$.
T F $1 = 2$ and $1 + 2 = 3$
T F $1 = 2$ or $1 + 2 = 3$
T F $1 = 2$ iff $1 + 2 = 3$

5. (2 pts) Give two synonyms for 'is equivalent to'.