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'.

(a)

(b)

