Math 200 - Quiz 6

October 13, 2010
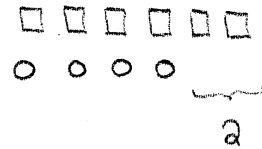
Name __key__

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (1 point) Give an example of a set that is NOT closed under addition. Justify your answer.

    $\{1\}$ $1 + 1 = 2$ AND $2 \notin \{1\}$

2. (1 point) Use the comparison model to model $6 - 4$.

    How many more is 6 than 4 ?

3. (1 point) State the whole number addition property that justifies each of the following. Briefly explain your reasoning.

    (a) $(5 + 3) + 7 = (3 + 5) + 7$

    COMMUTATIVE. THE ORDER OF 3 & 5 CHANGED.

    (b) $(3 + 2) + (4 + 1) = (4 + 1) + (3 + 2)$

    COMMUTATIVE. THE ORDER OF $(3+2)$ & $(4+1)$ CHANGED.

4. (1 point) Give an example to show that the properties of addition are not necessarily properties of subtraction.

    $4 - 1 \neq 1 - 4$ SUBTRACTION IS NOT COMMUTATIVE.

5. (1 point) Use one of the strategies for mastering basic addition facts to compute $8 + 5$. Show the work or explain your reasoning.

    MAKING 10... $8 + 5 = (8 + 2) + 3 = 10 + 3 = 13$

6. (1 pt ex cred) Even though addition is a binary operation, we can write $5+7+2$ without ambiguity. Which property of addition allows us to do this? Briefly explain.

    ASSOCIATIVE PROP. SINCE $(5+7)+2 = 5 + (7+2)$

    WE MIGHT AS WELL WRITE IT WITHOUT PARENTHESES.