

Math 200 - Quiz 4

September 26, 2012

Name key

Score _____

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

1. (2 points) Suppose U is the set of all Prairie State College students, A is the set of all Math 200 students, and B is the set of all English 101 students. Describe, in words, an element of each of these sets.

(a) \bar{A} AN ELEMENT OF \bar{A} IS A PSC STUDENT WHO IS NOT A MATH 200 STUDENT.

(b) $A \cap B$ AN ELEMENT OF $A \cap B$ IS A PSC STUDENT TAKING BOTH MATH 200 AND ENGLISH 101.

(c) $A \cup \bar{B}$ AN ELEMENT OF $A \cup \bar{B}$ IS A PSC STUDENT WHO IS TAKING MATH 200 OR NOT TAKING ENGLISH 101.

(d) $\overline{A \cup B}$ AN ELEMENT OF $\overline{A \cup B}$ IS A PSC STUDENT WHO IS NEITHER TAKING MATH 200 NOR ENGLISH 101.

2. (1 point) Referring to the problem above, what would it mean if $B \subseteq A$?

IF $B \subseteq A$, THEN EVERY ENGLISH 101 STUDENT WOULD ALSO BE TAKING MATH 200.

3. (1 point) List all subsets of $\{a, b, c\}$.

$\emptyset, \{a\}, \{b\}, \{c\}, \{a, b\}, \{a, c\}, \{b, c\}, \{a, b, c\}$

4. (1 point) Let $P = \{1, 2, 3, 4, 5\}$. Give an example of a set Q such that $Q \subseteq P$, $n(Q) = 3$, and $\emptyset \subseteq Q$.

3 ELEMENT SUBSET OF P

$$Q = \{2, 3, 5\}$$