

Math 112 - Quiz 3

February 7, 2019

Name _____

Score _____

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

1. (3 points) Let M be the set of all current PSC math students, and let E be the set of all current PSC English students.

(a) Describe, in words, an element of the set $M - E$.

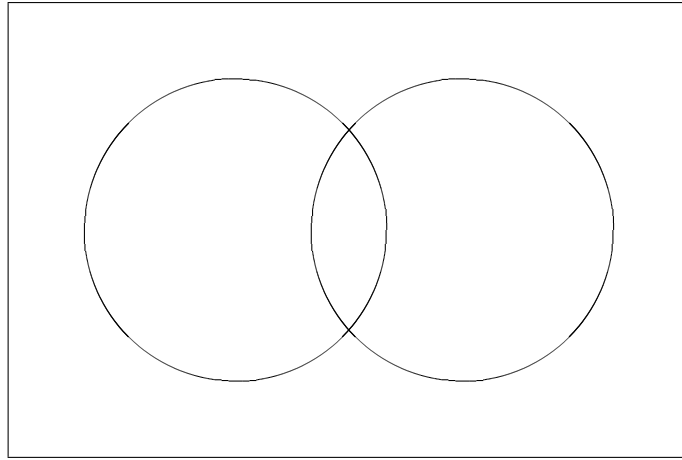
(b) Describe, in words, an element of the set $E - M$.

(c) Describe, in words, an element of the set $M \cap E$.

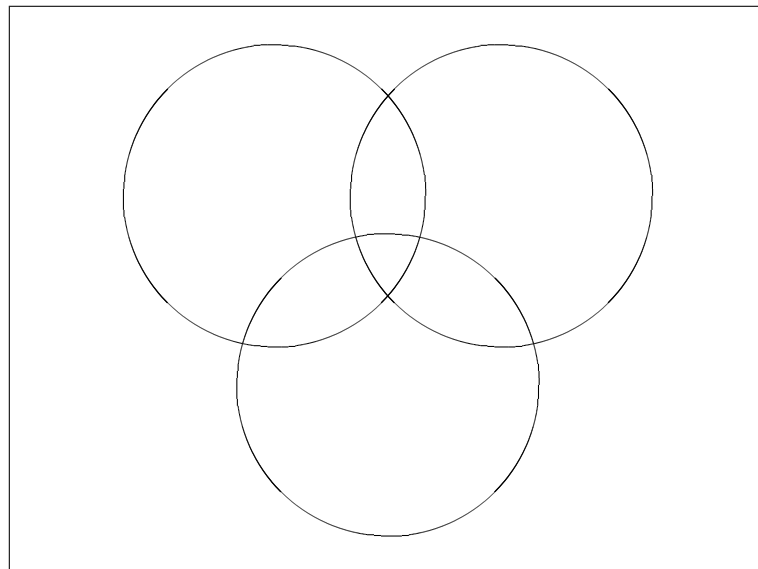
2. (2 points) Let $A = \{\text{red}, \text{blue}\}$ and $B = \{\text{pen}, \text{marker}\}$. List the elements of the set $A \times B$.

TAKE-HOME PORTION OF QUIZ 3. DUE TUESDAY.

3. (2 points) In the two-set Venn diagram shown below, label the sets A and B . Then label the four distinct (disjoint) regions with Roman numerals. Identify and shade the regions that make up $(A \cap B') \cup (A' \cap B)$.



4. (2 points) In the three-set Venn diagram shown below, label the sets A , B , and C . Then label the distinct (disjoint) regions of the diagram with Roman numerals. Identify and shade the regions that make up $A \cap (B \cup C)$.



5. (1 point) Suppose A and B are sets with $n(A) = 10$, $n(B) = 12$, and $n(A \cup B) = 14$. Determine $n(A \cap B)$.