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Sets and Set Theory Worksheet 3 Key

Name _____ Date _____

Use your knowledge of Sets and Set Theory to answer each question below.

1. If U = {whole numbers}, A = {2, 3, 5, 7, 11} and B = {1, 3, 5, 9}, then which of the following statements is true?

   a) A ⊂ B b) $B \subset A$ **c) $A \subset U$** d) A is null

2. A = {0, 2, 4, 6, 8} and B = {1, 3, 5, 9}, which of the following could be the universal set? Circle all possible answers.

   A. U = {whole numbers < 10}

   B. U = {prime numbers}

   C. U = {single digits}

   D. U = {even whole numbers}

3. Complete each sentence below.

   a) The **Universal** set is the set of all elements under consideration.

   b) The **null (empty)** set is a subset of all sets.

   c) Two sets A and B are **disjoint** if they have no elements in common.

   d) The **complement** of set A is denoted as A' and is read as *A-prime*.

   e) The intersection between a set and its complement is the **null (empty)** set.

   f) In a **Venn diagram**, sets are represented by shapes; usually circles or ovals. The elements of a set are labeled within the circle.

   g) If the universal set contains sets A and B, then A **is a subset of** U. (or ⊂)

   h) The **union** of a set and its complement is the universal set.