AP Calculus AB
Dr. Paul L. Bailey

Activity 0808
Tuesday, August 8, 2023

Name:

Problem 1. Find the decimal expansion of $\frac{5}{13}$.

Problem 2. Write the rational number $5.4\overline{32}$ in the form $\frac{a}{b}$, where $a, b \in \mathbb{Z}$.

Problem 3. Let $A = \{1, 2, 5, 7, 8\}$ and $B = \{2, 4, 6, 7, 9\}$. Find the following sets.

(a) $A \cup B$

(b) $A \cap B$

(c) $A \setminus B$

(d) $B \setminus A$

(e) $(1, 7) \setminus A$

(f) $(A \cup B) \setminus (A \cap B)$

Problem 4. Compute the following sets.

(a) $(\{2, 5, 8, 13\} \cup \{2, 3, 8, 9\}) \setminus \{2, 4, 6\}$

(b) $[1, 8] \cup (5, 10)$

(c) $[3, 10] \cap (4, 14]$

(d) $\{2, 3, 5, 7, 11, 13, 17\} \setminus [5, 11)$

(e) $[2, 8] \setminus \{2, 3, 5, 7, 11\}$

Problem 5. Let $A = \{x \in \mathbb{N} \mid x \leq 10\}$. Let $B = \{x \in \mathbb{N} \mid x = 2n + 1 \text{ for some } n \in A\}$. Let $C = \{x \in A \mid x = 2n + 1 \text{ for some } n \in A\}$.

(a) Write A using correct roster notation.

(b) Write B using correct roster notation.

(c) Write C using correct roster notation.