Math 61 Quiz Week 2 10 minutes.

Your Name:	UCLA ID:

SECTION: Cross one box below

Day \ T.A.	John	Zach	Sam
Tuesday	1A	1C	1E
Thursday	1B	1D	1F

Problem 1. Circle the correct answer. If a sequence s_n is defined by $s_n = 6 \cdot 3^n + 18 \cdot 2^n$ for $n \geq 1$ then s_{n-1} has the following formula:

(a) $2 \cdot 3^n + 9 \cdot 2^n$,

(b) $18 \cdot 3^n + 36 \cdot 2^n$,

(c) $3^n + 9 \cdot 2^n$,

(d) $3^n + 6 \cdot 2^n$,

(e) $2 \cdot 3^n + 6 \cdot 2^{n-1}$.

Problem 2. Circle ALL the correct answers. Given sets A, B, C, the set $A \cap \overline{B \cap C}$ also equals

(a) $\overline{\overline{A} \cup B} \cup (A \cap \overline{C})$

(b) $(A \cap \overline{B}) \cup (A \cap \overline{C})$

(c) $\overline{\overline{A} \cup (B \cap C)}$

(d) $(A \cap \overline{B}) \cap (A \cap \overline{C})$

(e) $(A \cap \overline{B}) \cup \overline{\overline{A} \cup C}$

$A \cap (B \cap C) = A \cap (\overline{B} \cup \overline{C})$

$= (A \cap \overline{B}) \cup (A \cap \overline{C})$ ✓

$= \overline{(\overline{A} \cup B)} \cup (A \cap \overline{C})$ ✓

$= (A \cap \overline{B}) \cup \overline{(\overline{A} \cup C)}$ ✓

$\overline{A} \cup (B \cap C)$ ✓

$\overline{X \cap Y} = \overline{X} \cup \overline{Y}$

Problem 3. Given functions $f : Y \to Z$ and $g : X \to Y$ below, draw the function $f \circ g$ (i.e. $f \circ g(a) = f(g(a))$) with domain X and range Z.