

King Fahd University of Petroleum and Minerals
Prep-Year Math Program
Math (001)-Term (181)
Recitation (1.8)

Question 1: Solve the following

(a): $|x + 3| = |2x + 1|$ (b): $\left| \frac{5}{3} - \frac{1}{2}x \right| + \frac{1}{3} > \frac{5}{9}$ (c): $|3x + 2| < 1$

Answer: (a): $SS = \left\{ 2, -\frac{4}{3} \right\}$

(b): $SS = \left(-\infty, \frac{26}{9} \right) \cup \left(\frac{34}{9}, \infty \right)$

(c): $SS = \left(-1, -\frac{1}{3} \right)$

Question 2: Find the sum of all solutions of $3|2 - x|^2 - 7|x - 2| = 6$.

$SS = \{-1, 5\}$

Answer: $sum = 4$

Question 3: If $|x - 5| < \frac{1}{2}$ is equivalent to $m < 2x - 3 < n$, then the values of m and n are

(a) $-1, 1$ (b) $-\frac{1}{2}, \frac{1}{2}$ (c) $6, 8$ (d) $3, 4$ (e) $9, 11$

Answer: (c) $m = 6$ and $n = 8$

Question 4: If A is the solution set of $\frac{x^2 + 14x + 49}{x^2 + x - 12} \leq 0$ and B is the solution set of

$3 \leq |x| \leq 7$, then $A \cap B =$

- (a) $[-7, 7)$
- (b) $(-4, 3)$
- (c) $\{-7\} \cup (-4, 3) \cup (3, 7)$
- (d) $(-4, -3] \cup \{-7\}$
- (e) $(-7, -3) \cup (3, 7)$

Answer: (d) $A \cap B = (-4, -3] \cup \{-7\}$