

NAME: _____ Score _____/10

Please **print** your name NO DECIMALS

- 1) **T F** $|3x - 7| < 4$ is equivalent to $-4 < |3x - 7| < 4$ is equivalent to $-4 < |3x - 7| < 4$.
- 2) **T F** $|3x - 7| > 4$ is equivalent to $-4 > |3x - 7| > 4$.
- 3) **T F** $|3x - 7| < 4$ is equivalent to $-4 < 3x - 7 < 4$.
- 4) The solution set for $|3x - 7| = 4$ is $\left\{1, \frac{11}{3}\right\}$

a. What is the solution set for $|3x - 7| < 4$. Write your response in interval notation.

$$\left(1, \frac{11}{3}\right) \text{ Absolutely no work required!}$$

b. What is the solution set for $|3x - 7| > 4$. Write your response in interval notation.

$$(-\infty, 1) \cup \left(\frac{11}{3}, \infty\right) \text{ Absolutely no work required!}$$

- 5) What is the solution set for $\left|\sqrt{5}x - \frac{7}{15}\right| < -8$?

\emptyset Absolutely no work required!

- 6) What is the solution set for $\left|\sqrt{5}x - \frac{7}{15}\right| = 0$?

$$\left|\sqrt{5}x - \frac{7}{15}\right| = 0 \text{ is equivalent to}$$

$$\sqrt{5}x - \frac{7}{15} = 0$$

$$\sqrt{5}x = \frac{7}{15}$$

$$x = \frac{7}{15\sqrt{5}}$$

- 7) Suppose we label the solution set for $\left|\sqrt{5}x - \frac{7}{15}\right| < \sqrt{14}$ as A, the solution set for

$\left|\sqrt{5}x - \frac{7}{15}\right| = \sqrt{14}$ as B, and the solution set for $\left|\sqrt{5}x - \frac{7}{15}\right| > \sqrt{14}$ as C. Then

a. $A \cup B \cup C = \mathbf{R}$

b. $A \cap C = \emptyset$

c. $A \cup (B \cap C) = \mathbf{A}$ Because $B \cap C = \emptyset$, $A \cup (B \cap C) = A \cup \emptyset = A$