

Quiz 1A

Name:

UAlbany Email:

Solution

Closed book/notes. No calculators allowed. Circle **one** choice for each multiple choice question below. No explanation is required to be shown and no partial credit will be given.

1. (3 Points) The domain of $S(x) = \sqrt{x-3}$ is

(A) $(-\infty, 3)$ (B) $(3, \infty)$ (C) $(-\infty, 3]$ ☒ (D) $[3, \infty)$

(E) None of the above.

$$\sqrt{x-3} \Rightarrow x-3 \geq 0 \Rightarrow x \geq 3 \Rightarrow [3, \infty)$$

2. (3 Points) The domain of $R(x) = \frac{1}{x^2 - 2x - 3}$ is

(A) $(-\infty, -1) \cup (3, \infty)$ (B) $(-1, 3)$ ☒ (C) $(-\infty, -1) \cup (-1, 3) \cup (3, \infty)$ (D) $(3, \infty)$ (E) $(-1, \infty)$

(F) None of the above.

$$\frac{1}{x^2 - 2x - 3} = \frac{1}{(x-3)(x+1)} \neq 0 \Rightarrow \begin{matrix} (x-3)(x+1) \neq 0 \\ \text{when} \\ x=3, x=-1 \end{matrix} \Rightarrow (-\infty, -1) \cup (-1, 3) \cup (3, \infty)$$

3. (4 Points) The domain of $G(x) = \frac{\sqrt{x-3}}{x^2 - 2x - 3}$ is

(A) $(-\infty, -1) \cup (3, \infty)$ (B) $(-1, 3)$ (C) $(-\infty, 3]$ (D) $[3, \infty)$ (E) $(-1, \infty)$ ☒ (F) None of the above.

From (1), $[3, \infty)$ and From (2) $(-\infty, -1) \cup (-1, 3) \cup (3, \infty)$.
Q. where do they both agree? $(3, \infty)$

Grade: /10