Calculus — Chapter1 Solutions

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1.

if $f(x) = g(\mu)$ then $x + \sqrt{2 - x} = \mu + \sqrt{2 - \mu}$, only $x < 2, \mu < 2$ and x = μ

2.

$f(x)$ and $g(x)$ have different independent variables that are not equal.

$$\{x \mid x \in (-\infty, 1) \cup (1, \infty)\} \tag{1}$$

$$\{x \mid x \in \mathbb{Z}\} \tag{2}$$

3.

(a) $f(1) = 1$

(b) $\{f(x) \mid -1 < f(x) < 1.5\}$

(c) $\{0, 3\}$

(d) $\{x \mid -1 < x < 0\}$

(e) $\{f(x) \mid -\infty < f(x) \leq 3\}$

(f) $\{x \mid -\infty < x \leq 1\}$

4.

(a) $f(-4) = -2$, $g(3) = 4$

(b) $\{-2, 2\}$

(c) $\{-3\}$

(d) $\{x \mid x >= 0\}$

(e) $\{f(x) \mid -\infty < f(x) \leq 3\}$

(f) $\{x \mid 0.5 < x < \infty\}$