

Practice Question 1 Answer: $f(2) = 11$, $f(-4) = -1$, $f(\Delta) = 2\Delta + 7$, $f(b+c) = 2 \times (b+c) + 7 = 2b + 2c + 7$

Practice Question 2

Answer: domain: $(-\infty, 3) \cup (3, \infty)$

Practice Question 3

Answer: range: $[0, \infty)$

Practice Question 4

Answer: $f(g(2)) = 132$ and $f(g(-1)) = 40$

Practice Question 5

Answer: $g(h(x)) = \sqrt{4x-2}$ and $h(g(x)) = 4\sqrt{x}-2$

Discussion Questions

Answers

1. (a) $(-\infty, \infty)$ (b) $(-\infty, 0]$ (c) $(-\infty, 4)$ (d) $(-\infty, 5) \cup (5, \infty)$

2. (a) $[-7, \infty)$ (b) $(-\infty, 0]$ (c) $(-5, \infty)$ (d) $[9, 9]$

3. (a) $8\sqrt{x-5} + x + 15$ (b) $\sqrt{x^2 + 2x} + 3$ (c) $\frac{1}{x^2 + 2x + 9}$

(d) $\frac{1}{\sqrt{x-5} + 7}$ (e) $\sqrt{\frac{1}{x+4} - 5} + 3$