

Even Answers

$$2.1 \text{ (}\#44\text{)} \quad \frac{f(a+h) - f(a)}{h} = 6a + 3h$$

$$\text{(}\#48\text{)} \quad \frac{f(a+h) - f(a)}{h} = \frac{-2}{(a+h+1)(a+1)}$$

$$2.7 \text{ (}\#52\text{)} \quad (f \circ g)(x) = x - 3, \quad x \geq 3$$

$$D: [3, \infty)$$

$$(g \circ f)(x) = \sqrt{x^2 - 3}$$

$$D: (-\infty, -\sqrt{3}] \cup [\sqrt{3}, \infty)$$

$$(f \circ f)(x) = x^4$$

$$D: (-\infty, \infty)$$

$$(g \circ g)(x) = \sqrt{\sqrt{x-3} - 3}$$

$$D: [12, \infty)$$

$$\text{(}\#58\text{)} \quad (f \circ g)(x) = \frac{2x+4}{x}, \quad x \neq -2$$

$$D: (-\infty, -2) \cup (-2, 0) \cup (0, \infty)$$

$$(g \circ f)(x) = \frac{1}{1+x}, \quad x \neq 0$$

$$D: (-\infty, -1) \cup (-1, 0) \cup (0, \infty)$$

$$(f \circ f)(x) = x, \quad x \neq 0$$

$$D: (-\infty, 0) \cup (0, \infty)$$

$$(g \circ g)(x) = \frac{x}{3x+4}, \quad x \neq -2$$

$$D: (-\infty, -2) \cup (-2, -\frac{4}{3}) \cup (-\frac{4}{3}, \infty)$$

$$2.8 \text{ (}\#68\text{)} \quad f^{-1}(x) = (x-2)^2 - 3, \quad x \geq 2$$