

1. $2x + h$

2.

a) 2

b) 0

c) -5

d) $(-\infty, \infty)$ (or \mathbb{R})

3. $\{x \mid x \neq -3 \text{ and } x \neq 2\}$ (or $(-\infty, -3) \cup (-3, 2) \cup (2, \infty)$)

4.

a) $f(-1) = \frac{2}{3}$, $f(0)$ is undefined, $f(1) = -\sqrt{2}$, $f(2)$ is undefined, $f(3) = 0$, $f(4)$ is undefined.

b) $\{x \mid x \leq 3 \text{ and } x \neq 0 \text{ and } x \neq 2\}$ (or $(-\infty, 0) \cup (0, 2) \cup (2, 3]$)

5.

a) $g(-1) = 0$, $g(0) = \frac{1}{2}$, $g(1) = 0$, $g(4) = -\frac{15}{4}$.

b) $\{x \mid x > -\frac{4}{3}\}$ (or $(-\frac{4}{3}, \infty)$)

6.

a) $2x + h + 1$

b) $(-\infty, \infty)$ (or \mathbb{R})

7.

a) $\frac{2}{\sqrt{2x+2h+3} + \sqrt{2x+3}}$

b) $\{x \mid x \geq -\frac{3}{2}\}$ (or $[-\frac{3}{2}, \infty)$)

8.

a) $\frac{-2}{(x+h+1)(x+1)}$

b) $\{x \mid x \neq -1\}$ (or $(-\infty, -1) \cup (-1, \infty)$)

9.

a) $\frac{-3}{(x+h-3)(x-3)}$

b) $\{x \mid x \neq 3\}$ (or $(-\infty, 3) \cup (3, \infty)$)

10.

a) $f(-2) = -\frac{1}{2}$, $f(-1)$ is undefined, $f(-\frac{1}{8}) = -\frac{1}{2}$, $f(0) = 0$, $f(27) = 3$

b) $\{x \mid x \neq -1\}$ (or $(-\infty, -1) \cup (-1, \infty)$)

11.

a) $g(-3)$ is undefined, $g(-2) = 2$, $g(0) = 168$ (supermarket!), $g(1) = \sqrt{3}$, $g(98) = 10$

b) $[-2, \infty)$ (or $\{x \mid x \geq -2\}$)