Lesson 3.2.5

3-110. See below:

a. $\frac{x-3}{2x+1}$

b. $\frac{2x-7}{x-9}$

c. 5

d. $\frac{x+2}{2x+3}$

e. $\frac{2x+5}{x^2-2x-15}$

f. $\frac{3x+1}{4x+1}$

3-111. See below:

a. $\frac{1}{x^2-x-2}$

b. The graphs of $Y_1 = 1/(x^2 - x - 2)$ and $Y_2 = (1/(x - 2)) \times (1/(x + 1))$ are the same. Check the table to see if both functions have the same y values or change the thickness of the line for Y_2.

c. Students check their work.

d. $\frac{2x-1}{x^2-x-2}, \frac{3}{x^2-x-2}, \frac{x+1}{x-2}$

3-112. Responses will vary.

Review & Preview

3-113. See below:

a. $\frac{2}{3x+1}$

b. $\frac{x-7}{x-3}$

c. $\frac{x-2}{2x+12}$

d. $\frac{1}{x+2}$

3-114. See below:

a. 1

b. 4

c. 2

d. 5

3-115. See below:

a. $x = 3$

b. $0 \le x \le 6$

c. $x = 1$ or 5

d. $x < 2$ or $x > 4$

3-116. Domain: all real numbers; Range $y \ge 0$; $g(-5) = 8$, $g(a + 1) = 2a^2 + 16a + 32$, $x = 1$ or $x = 7$, $x = -3$

3-117. $x = -3$ or -11

3-118. See below:

a. 1

b. 3

c. 2

3-119. $(-3, 8)$ and $(1, -12)$

3-120. See below:

a. $\frac{x+1}{x^2-4}$

b. $\frac{x+6}{2(x+2)^2}$

c. $\frac{1}{x}$

d. $-\frac{1}{2}$

3-121. $x = 62$

3-122. See below:

a. $y = -\frac{1}{2}x + 12$

b. $y = \frac{2}{3}x - 15$

3-123. The width is 1.5 meters, and the outer dimensions are 8 m by 5 m.

3-124. $80x + 0.5 = 100x$, so $x = \frac{1}{40}$ of an hour or 1.5 minutes.

3-125. $\frac{6}{7}$

3-126. See below:

a. $(5x - 1)(5x + 1)$

b. $5x(x + 5)(x - 5)$

c. $(x + 9)(x - 8)$

d. $x(x - 6)(x + 3)$