

Chapter 7 BLM Answers

BLM 7-4 Section 7.1 Extra Practice

1. a) 42 b) $\frac{82}{3}$ c) 3.75 d) $1\frac{5}{6}$
2. a) $|-3|, |-3.9|, |-4|, |-4.1|, |-4.5|$
 b) $-\left|\frac{6}{10}\right|, \left|\frac{6}{25}\right|, \left|-\frac{6}{20}\right|, \left|-\frac{6}{15}\right|, \left|-\frac{6}{5}\right|$
3. a) $|-2.1|, \left|-\frac{5}{3}\right|, \left|-\frac{3}{4}\right|, |-0.6|, |-1.2|$
 b) $\left|\frac{46}{2}\right|, \left|-\frac{1}{23}\right|, \left|-\frac{2}{46}\right|, -2\left(\left|\frac{1}{23}\right|\right), -23$
4. a) 14 b) 32 c) 13 d) -2.4
5. a) 16 b) -6.25 c) $\frac{10}{3}$ d) 49
6. a) 8 b) 16 c) 9 d) 8
7. a) 1.5 b) 4 c) 2 d) 3

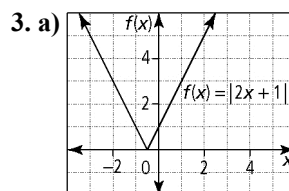
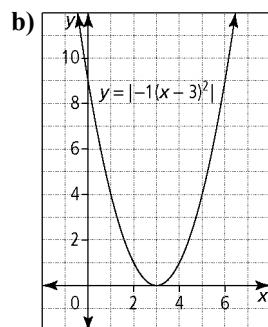
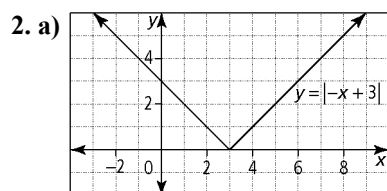
BLM 7-5 Section 7.2 Extra Practice

1. a)

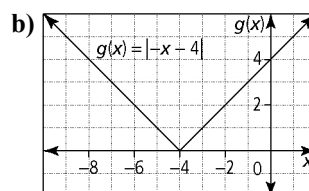
x	y
0	1
2	0
4	1
6	2
8	3

b)

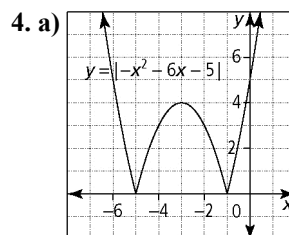
x	y
-4	8
-2	0
0	0
2	8
4	24



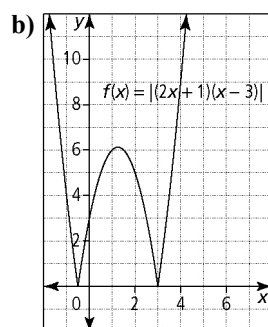
x-intercept: $\left(-\frac{1}{2}, 0\right)$; y-intercept: (0, 1);
 domain: $\{x \mid x \in \mathbb{R}\}$; range: $\{y \mid y \geq 0, y \in \mathbb{R}\}$



x-intercept: (-4, 0); y-intercept: (0, 4);
 domain: $\{x \mid x \in \mathbb{R}\}$; range: $\{y \mid y \geq 0, y \in \mathbb{R}\}$



x-intercepts: (-5, 0) and (-1, 0); y-intercept: (0, 5);
 domain: $\{x \mid x \in \mathbb{R}\}$; range: $\{y \mid y \geq 0, y \in \mathbb{R}\}$



x-intercepts: $\left(-\frac{1}{2}, 0\right)$ and (3, 0); y-intercept: (0, 3);
 domain: $\{x \mid x \in \mathbb{R}\}$; range: $\{y \mid y \geq 0, y \in \mathbb{R}\}$

5. a)
$$y = \begin{cases} 5x + 1, & \text{if } x \geq -\frac{1}{5} \\ -5x - 1, & \text{if } x < -\frac{1}{5} \end{cases}$$



$$\text{b) } y = \begin{cases} -\frac{1}{2}x + 4, & \text{if } x \leq 8 \\ \frac{1}{2}x - 4, & \text{if } x > 8 \end{cases}$$

$$\text{c) } y = \begin{cases} 2(x+2)^2 - 8, & \text{if } x \leq -4 \text{ or } x \geq 0 \\ -2(x+2)^2 + 8, & \text{if } -4 < x < 0 \end{cases}$$

$$\text{d) } y = \begin{cases} -2(x+3)(x-1), & \text{if } -3 \leq x \leq 1 \\ 2(x+3)(x-1), & \text{if } x < -3 \text{ or } x > 1 \end{cases}$$

6. **a)** $h(x)$ and $k(x)$ **b)** all

c) $g(x)$, $h(x)$, and $k(x)$ **d)** all

7. **a)** all points where $x \geq 3$ **b)** $(0, 0)$

c) all points where $-4 \leq x \leq 0$ **d)** all points

BLM 7–6 Section 7.3 Extra Practice

1. **a)** $x = -3$ or $x = 1$ **b)** no solution

c) $x = \pm \frac{5}{2}$ **d)** $x = 0$

2. **a)** yes **b)** no **c)** yes **d)** yes

3. **a)** $x = \frac{1}{4}$ **b)** no solution **c)** $x \geq 5$ **d)** $n = 8$

4. **a)** $x = 1 \pm \sqrt{2}$ and $x = 1$

b) $x = 4$ and $x = -1$

c) $x = 2$ and $x = -8$

d) $x = 1 \pm \frac{\sqrt{7}}{2}$, $x = \frac{1}{2}$, and $x = \frac{3}{2}$

5. **a)** $x = -5$ or $x = 5$

b) $x = \frac{-3}{2}$, $x = -1$, $x = \frac{-1}{2}$, and $x = 3$

c) $x = 2, 3, 5, 6$ **d)** $x = 1 \pm 2\sqrt{2}$ and $x = 1$

6. **a)** yes **b)** no **c)** yes **d)** no

7. **a)** not possible **b)** $k = 0$, $k > 4$

c) $k = 4$ **d)** $0 < k < 4$

8. Chloe. Mark's solution is incorrect. $0 = (x + 4)(x - 3)$;
 $x = -4$ or $x = 3$

9. **a)** Rearrange the equation $|-x^2 + 2| - \frac{x}{2} = 0$ to

$|-x^2 + 2| = \frac{x}{2}$. The graph $f(x) = \frac{x}{2}$ is the right side
and $g(x) = |-x^2 + 2|$ is the left side. $f(x) = g(x)$ at the
points of intersection. The intersection points are the
solutions to the equation.

b) The solutions are 1.19 and 1.69.



BLM 7-7 Section 7.4 Extra Practice

1.

	Function	i) Reciprocal	ii) Domain	iii) Range
a)	$y = x + 4$		$\{x \mid x \in \mathbb{R}\}$	$\{y \mid y \in \mathbb{R}\}$
		$y = \frac{1}{x+4}$	$\{x \mid x \neq -4, x \in \mathbb{R}\}$	$\{y \mid y \neq 0, y \in \mathbb{R}\}$
b)	$y = 3x - 9$		$\{x \mid x \in \mathbb{R}\}$	$\{y \mid y \in \mathbb{R}\}$
		$y = \frac{1}{3x-9}$	$\{x \mid x \neq 3, x \in \mathbb{R}\}$	$\{y \mid y \neq 0, y \in \mathbb{R}\}$
c)	$y = (x+2)(x-2)$		$\{x \mid x \in \mathbb{R}\}$	$\{y \mid y \geq -4, y \in \mathbb{R}\}$
		$y = \frac{1}{(x+2)(x-2)}$	$\{x \mid x \neq \pm 2, x \in \mathbb{R}\}$	$\{y \mid y \neq 0, y \in \mathbb{R}\}$
d)	$y = x^2 + 6x + 9$		$\{x \mid x \in \mathbb{R}\}$	$\{y \mid y \geq 0, y \in \mathbb{R}\}$
		$y = \frac{1}{x^2 + 6x + 9}$	$\{x \mid x \neq -3, x \in \mathbb{R}\}$	$\{y \mid y \geq 0, y \in \mathbb{R}\}$

2.

	i) Zeros	ii) Reciprocal	iii) Non-permissible Values	iv) Vertical Asymptote
a)	$x = -3$	$y = \frac{1}{3+x}$	$x \neq -3$	$x = -3$
b)	$x = \frac{1}{2}$	$y = \frac{1}{2x-1}$	$x \neq \frac{1}{2}$	$x = \frac{1}{2}$
c)	$x = -2$ $x = 3$	$y = \frac{1}{(x+2)(x-3)}$	$x \neq -2$ $x \neq 3$	$x = -2$ $x = 3$
d)	$x = -1$ $x = -5$	$y = \frac{1}{-2x^2 - 12x - 10}$	$x \neq -1$ $x \neq -5$	$x = -1$ $x = -5$

3. a) $x = 5$ b) $x = \frac{2}{7}$

c) $x = -1, x = -0.5$ d) $x = -4, x = 3$



4. There are no x -intercepts, only y -intercepts.

a) $y = \frac{1}{5}$ b) $y = \frac{1}{3}$ c) $y = \frac{-1}{3}$ d) $y = \frac{1}{12}$

5.

	Reciprocal	Horizontal Asymptote	Vertical Asymptotes	Invariant Points	Intercepts
a)	$y = \frac{1}{x+2}$	$y = 0$	$x = -2$	$(-1, 1)$ and $(-3, -1)$	$y = \frac{1}{2}$
b)	$y = \frac{1}{3x}$	$y = 0$	$x = 0$	$(\frac{1}{3}, 1)$ and $(\frac{-1}{3}, -1)$	none
c)	$y = \frac{1}{x^2-9}$	$y = 0$	$x = -3$ $x = 3$	$(3.16, 1)$, $(-3.16, 1)$, $(2.83, -1)$, and $(-2.83, -1)$	$y = \frac{-1}{9}$
d)	$y = \frac{1}{(x+1)^2}$	$y = 0$	$x = -1$	$(-2, 1)$ and $(0, 1)$	$y = 1$

