Name: _____ Date: _____

BLM 9–4

Section 9.1 Extra Practice

1. Which ordered pairs are solutions to each given inequality?

a) $x - 3y < 18$

A (3, –5) **B** (0, 0) **C** (–5, 3) **D** (5, –5)

b) $0 < 2x - 5y$

A (5, 2) **B** (2, 5) **C** (–5, 2) **D** (2, –5)

c) $x - 6 \leq y$

A (1, 6) **B** (6, 1) **C** (–1, 6) **D** (–1, –6)

2. Consider each inequality.

i) Express y in terms of x. Identify the slope and the y-intercept.

ii) Indicate whether the boundary should be a solid line or a broken line.

iii) Use technology to graph the inequality.

a) $2x - 7y \geq 14$ **b)** $5 - x + 3y < 0$

c) $y + 4 > 0$ **d)** $5x + 2y \leq 4$

3. Consider each inequality.

i) Determine the x-intercept and the y-intercept of the boundary.

ii) Indicate whether the boundary should be a solid line or a broken line.

iii) Use technology to graph the inequality.

a) $y < 2x + 5$ **b)** $x - 5y \geq 25$

c) $3x + y + 6 > 0$ **d)** $x + 5 < 0$

4. Graph each inequality.

a) $y \leq -2x + 7$ **b)** $3x + y < -9$

c) $x \leq 2y + 8$ **d)** $4x - 5y \geq 20$

5. Ben is buying snacks for his friends. He has $10.00. The choices are apples for $0.80 and muffins for $1.25.

a) Write an inequality in two variables to model this situation. Define your variables.

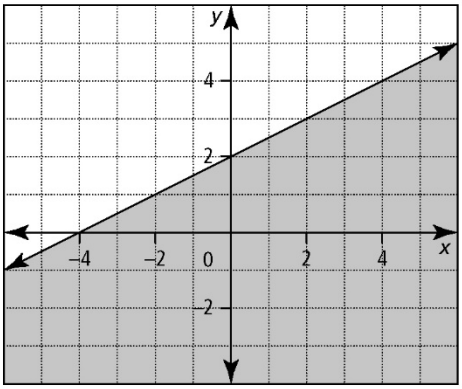
b) State the restrictions on the variables.

c) Graph the inequality.

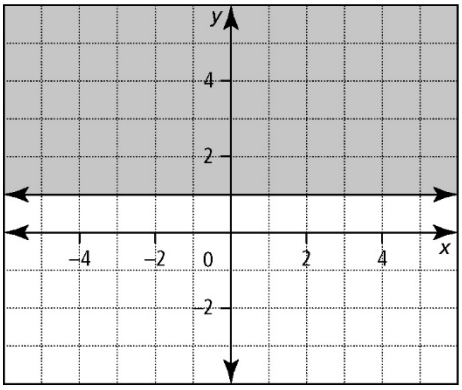
d) Why is (5, 4.8) not a solution?

6. Determine the inequality that corresponds to each graph.

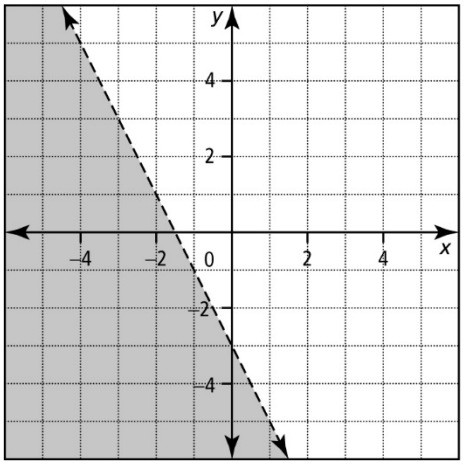
a)



b)



c)

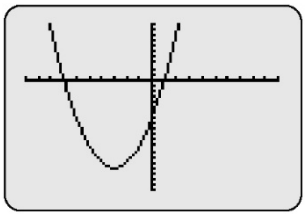


Name: _____ Date: _____

BLM 9–5

Section 9.2 Extra Practice

1. Given the graph of $f(x) = (x - 1)(x + 7)$, solve the following.

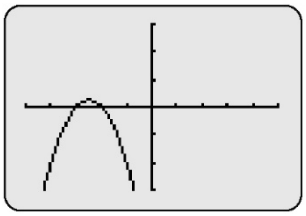


a) $(x - 1)(x + 7) = 0$

b) $(x - 1)(x + 7) > 0$

c) $(x - 1)(x + 7) < 0$

2. For the graph of $f(x) = -x^2 - 5x - 6$, determine each solution.



a) $-x^2 - 5x - 6 = 0$

b) $-x^2 - 5x - 6 > 0$

c) $-x^2 - 5x - 6 < 0$

3. Is the value of x a solution to the given inequality? Show your work.

a) $x^2 + 3x > -5$, $x = 0$

b) $(x - 4)(x + 3) \leq 7$, $x = 0$

c) $2x - 3 > x^2 + x$, $x = 1$

d) $3x^2 + x - 9 \geq 0$, $x = -2$

4. Determine the solution to each inequality.

a) $(x - 1)(x + 5) > 0$

b) $0 \geq (x - 1)^2 - 4$

c) $3(x + 1)(2x - 3) \leq 0$

d) $2x(x - 2) \leq 4$

5. Solve each inequality.

a) $4x^2 + 18 > 17x$

b) $-8x^2 + 2x + 15 \geq 0$

c) $x^2 - x + 2 \leq 0$

d) $4x^2 - 12x + 9 \leq 0$

6. Determine the solution to each inequality.

a) $x^2 + 4x + 3 > 2x^2$

b) $x(x - 3) \leq 5$

c) $(x - 1)(x + 5) \geq 1$

d) $x^2 - 2x - 3 \geq 2x^2 + 9x + 4$

7. Given the function $f(x) = x^2 + 6x$,

a) determine the zeros of the function

b) solve the inequality $f(x) > 0$

c) solve the inequality $f(x) \leq -5$

Name: _____ Date: _____

BLM 9–6

Section 9.3 Extra Practice

1. Which ordered pairs are solutions to the given inequality?

a) $y > -x^2 + 4x - 3$

A (2, 1) **B** (0, 0) **C** (3, –2) **D** (1, 1)

b) $y \geq x^2 + 6x - 4$

A (–2, –7) **B** (0, 0) **C** (2, 5) **D** (–7, 2)

c) $y \leq 3(x - 1)^2 + 4$

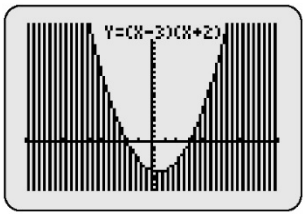
A (1, 5) **B** (0, 7) **C** (–1, 9) **D** (3, 18)

d) $y < (3x - 1)(x + 2)$

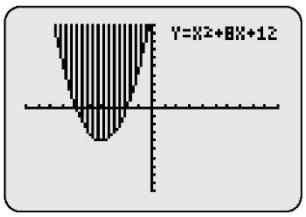
A (–2, 0) **B** (1, 3) **C** (–5, 10) **D** (0, 5)

2. Write an inequality to describe each graph. The given equation for each boundary is part of the solution.

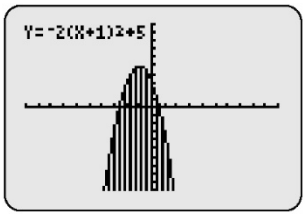
a)



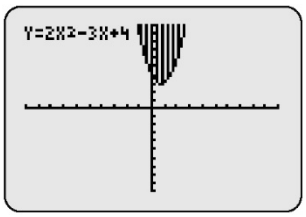
b)



c)



d)



3. Graph each quadratic inequality.

a) $y < (x - 5)^2 + 4$

b) $y > (2x + 1)^2$

c) $3y \leq (x - 1)^2 + 6$

d) $y - 4 \geq 3(x + 2)^2$

4. Graph each quadratic inequality.

a) $y > -x^2 - 3x - 4$

b) $y < (x - 5)(x + 7)$

c) $y \geq 6x^2 - x - 1$

d) $-2y \geq x^2 - 1$

5. The stone archway shown can be defined by $10x^2 + 9y - 90 = 0$. Write an inequality to represent the region below the archway.