

# BLM Answers

## BLM 8.GR.1 Get Ready

### Relations

1. Graphing exercise
2. a) linear                      b) quadratic  
c) quadratic                    d) linear

### Linear Systems

3. a)  $(-1, -1)$                       b)  $(4, 4)$
4. a)  $(7, -3)$                       b)  $(-2, -3)$

### Key Features of Quadratic Relations

5. a) vertex:  $(0, 0)$   
equation of axis of symmetry:  $x = 0$   
 $x$ -intercepts: 0  
 $y$ -intercept: 0  
b) vertex:  $(-8, -6)$   
equation of axis of symmetry:  $x = -8$   
 $x$ -intercepts:  $-4, -12$   
 $y$ -intercept: 4  
c) vertex:  $(2, 8)$   
equation of axis of symmetry:  $x = 2$   
 $x$ -intercepts: 2, 6  
 $y$ -intercept: 6

### Algebraic Operations

6. a)  $y = 17$                       b)  $y = -8$   
c)  $y = -11$                       d)  $y = 5$   
e) 6                                  f) 14
7. a)  $-3x^2 - 12$                       b)  $10x - 5x^2$   
c)  $x^2 + 3x - 4$                       d)  $x^2 + 12x + 36$   
e)  $4x^2 - 1$                           f)  $-5x^2 - 5x + 10$
8. a)  $-6(2x^2 + 3)$                       b)  $7x(x - 3)$   
c)  $4(x^2 - 2x + 6)$                       d)  $4(2 - 3x)(2 + 3x)$
9. a)  $(x + 3)(x + 2)$                       b)  $(x - 5)(x - 2)$   
c)  $(x + 6)(x - 3)$                       d)  $(x - 7)^2$   
e)  $(x + 5)(x - 5)$                       f)  $(2x - 3)(2x + 3)$

## BLM 8.1.1 Interpret Quadratic Relations

1. a) 50 cm                      b) 30 cm                      c) 51 cm                      d) 15 cm
2. a) 5 m                      b) 12 s                      c) 1.5 m
3. a) Graphing exercise with graphing calculator  
b)  $-0.05x^2 + 3.1x - 6$   
c) 30 m
4. a) Graphing exercise with graphing calculator  
b)  $-0.04x^2 + 10.16x + 17.48$   
c) 600 m                      d) 120 minutes
5. a) Graphing exercise with graphing calculator  
b)  $-0.25x^2 + 1.42x + 0.10$   
c) 3 m                      d) 0.25 m
6. a) Graphing exercise with graphing calculator  
b)  $-0.005x^2 + 4.14x + 32.57$   
c) 600 cm                      d) 150 cm

## BLM 8.2.1 Represent Quadratic Relations in Different Ways

1. a)  $-2, 3$                       b)  $5, -4$                       c)  $-1, -6$                       d)  $9, 8$
2. a)  $5, -2$                       b)  $6, 5$                       c)  $-4, -2$                       d)  $-4, 3$
3. a) minimum                      b) 15                      c)  $-3, -5$
4. a) minimum                      b)  $-6$                       c)  $-6, 1$
5. a) minimum                      b)  $-16$                       c)  $8, -2$
6. a) minimum                      b) 20                      c)  $10, 2$
7. a) upward                      b) upward  
c) upward                      d) upward
8. a)  $(-2.5, -0.25)$                       b)  $(1.5, -25.75)$   
c)  $(-2.5, -30.25)$                       d)  $(-6.5, 64.25)$
9. a) \$40  
b) 3.5 hours  
c) \$40

## BLM 8.3.1 The Quadratic Relation

$$y = ax^2 + c$$

1. a)  $y = 2x^2 - 5$   
 $y = x^2 - 5$   
 $y = 0.5x^2 - 5$   
b)  $y = -4x^2 + 5$   
 $y = -2x^2 + 5$   
 $y = -x^2 + 5$
2. Graphing exercise using a graphing calculator
3. a)  $-1$                       b) minimum                      c)  $0.5, -0.5$
4. a)  $-1$                       b) minimum                      c)  $2, -2$
5. a) 1                      b) maximum                      c)  $2, -2$
6. a) 60 cm                      b) 60 cm                      c) 3.87 s
7. a) 6000 m                      b) 12.25 s
8. a) 15 m                      b) 10 s
9. a) 2000 m                      b) 10 s

## BLM 8.4.1 Solve Problems Involving Quadratic Relations

1. a) 12 cm  
b) 412 cm                      c) 10 s
2. a) 90 cm                      b) 3.16 s
3. a) 4 m                      b) 1.41 s
4. a) 20 m                      b) second ball
5. a) \$9000                      b) 10 times                      c) \$12

## BLM 8.CR.1 Chapter 8 Review

### 8.1 Interpret Quadratic Relations

1. a) 3 m                      b) 5 s                      c) 1 m
2. a) Graphing exercise using a graphing calculator  
b)  $-0.025x^2 + 1.55x - 3$   
c) 30 m
3. a) Graphing exercise using a graphing calculator  
b)  $0.01x^2 + 0.39x - 0.09$   
c) 6 m                      d) 30 s

# BLM Answers

## 8.2 Represent Quadratic Relations in Different Ways

4. a) minimum      b) 30      c) 3, 10  
5. a) \$20      b) 3.5 hours      c) \$20

## 8.3 The Quadratic Relation $y = ax^2 + c$

6. a) 5000 m      b) 10 s  
7. a) 4000 m      b) 10 s

## 8.4 Solve Problems Involving Quadratic Relations

8. a) 6  
b) 206 cm      c) 10 s  
9. a) \$15 194.73  
b) 10 times      c) \$24

## BLM 8.PT.1 Chapter 8 Practice Test

### Multiple Choice

1. B      2. B      3. B      4. D  
5. D      6. D      7. D

### Short Responses

8. a) Graphing exercise using a graphing calculator  
b)  $-0.21x^2 + 1.71x - 0.01$   
c) 4 m  
9. a) Graphing exercise using a graphing calculator  
b)  $-0.01x^2 + 0.43x - 0.23$   
c) 7 m      d) 30 s  
10. a) -7, 2      b) 6, -5      c) -8, -4      d) 6, 9  
11. a) minimum      b) 42      c) 6, 7

### Extended Response

12. a) \$16      b) 3 hours      c) \$16  
13. a) 2000 m      b) 10  
14. a) \$25, 324.56  
b) 10 times      c) \$100

## BLM 8.CT.1 Chapter 8 Test

### Multiple Choice

1. B      2. B      3. B  
4. A      5. D      6. C  
7. D

### Short Responses

8. a) Graphing exercise using a graphing calculator  
b)  $-0.14x^2 + 0.87x - 0.19$   
c) 3  
9. a) Graphing exercise using a graphing calculator  
b)  $0.005x^2 + 0.31x - 0.2$   
c) 5 m      d) 30 s  
10. a) -4, 2      b) 3, -5      c) -2, -4      d) 7, 9  
11. a) minimum; -25  
b) 39      c) 13, 3

### Extended Response

12. a) 12.25      b) 2.5 h      c) \$21  
13. a) 35 m  
b) 10 s  
14. a) \$9816.23  
b) 10 times  
c) \$20