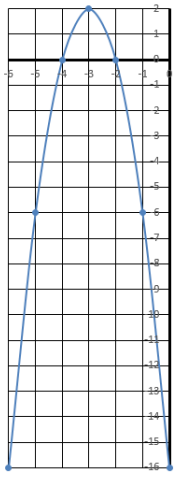
Homework Problem Set Sample Solutions

1. $y = -2(x + 3)^2 + 2$

vertex: (-3 , 2)

y-intercept: -16

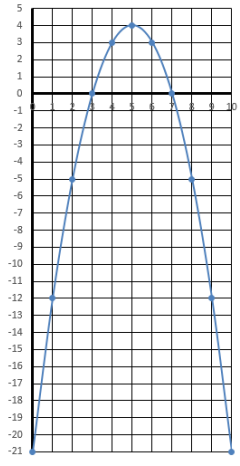


x- intercepts: -4 and -2

2. $y = -(x - 5)^2 + 4$

vertex: (5 , 4)

y-intercept: -21



x- intercepts: 3 and 7

NAME: _____ PERIOD: _____ DATE: _____

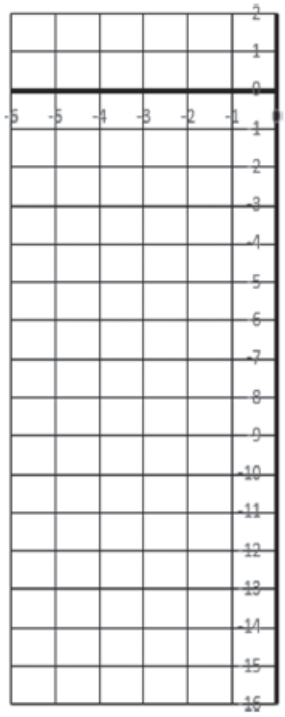
Homework Problem Set

For each problem, determine the vertex, the y-intercept, and then sketch the graph. Finally, find the x-intercepts for each graph.

1. $y = -2(x + 3)^2 + 2$

vertex: (_____, _____)

y-intercept: _____

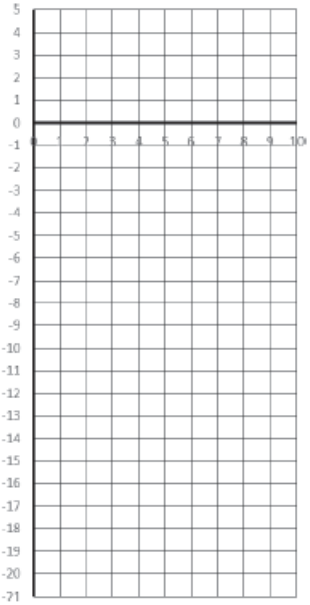


x-intercepts: _____ and _____

2. $y = -(x - 5)^2 + 4$

vertex: (_____, _____)

y-intercept: _____

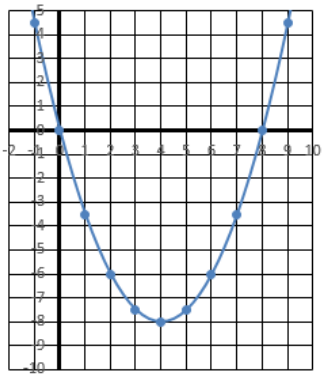


x-intercepts: _____ and _____

3. $y = \frac{1}{2}(x-4)^2 - 8$

vertex: (4 , -8)

y-intercept: 0

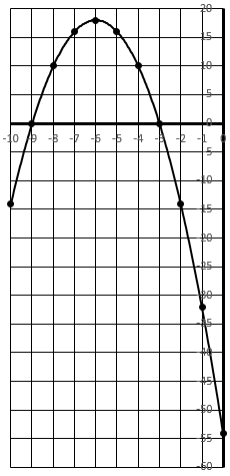


x- intercepts: 0 and 8

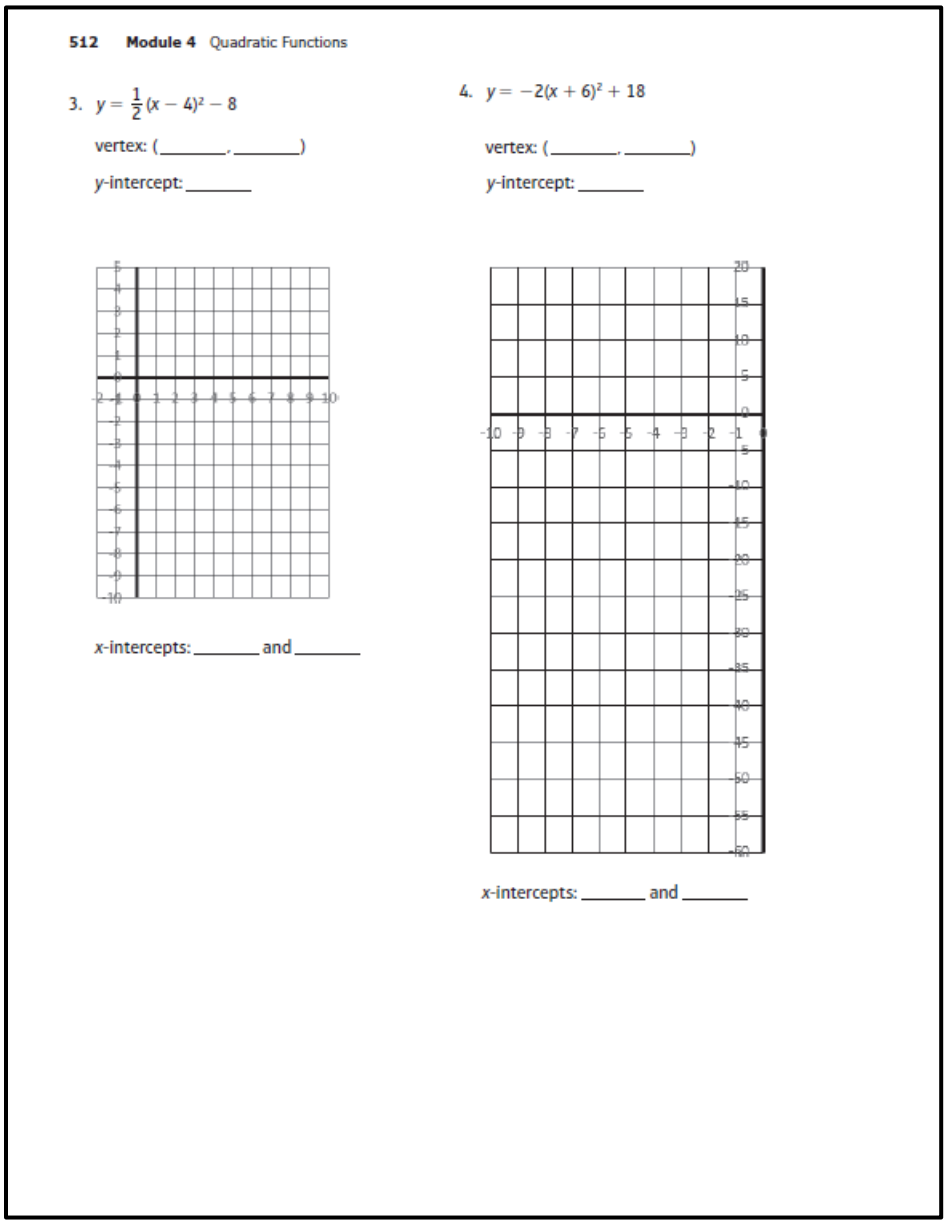
4. $y = -2(x+6)^2 + 18$

vertex: (-6 , 18)

y-intercept: -54



x- intercepts: -9 and -3



512 **Module 4** Quadratic Functions

3. $y = \frac{1}{2}(x-4)^2 - 8$

vertex: (_____, _____)

y-intercept: _____

x-intercepts: _____ and _____

4. $y = -2(x+6)^2 + 18$

vertex: (_____, _____)

y-intercept: _____

x-intercepts: _____ and _____

5. 6

6. -7

7. 20

8. $10\sqrt{2}$

9. $4|x|$

10. 24

11. 6

12. 11

13. 1

14. $2\sqrt{7}$

15. $2\sqrt{14}$

16. 4

Spiral REVIEW—Simplifying Radical Expressions

Simplify each radical expression.

5. $\sqrt{36}$ 6. $-\sqrt{49}$ 7. $\sqrt{100}+\sqrt{100}$ 8. $\sqrt{200}$

9. $\sqrt{16x^2}$ 10. $3\sqrt{64}$ 11. $-2\sqrt{9}+3\sqrt{16}$ 12. $\sqrt{81}+\sqrt{4}$

13. $\sqrt{1}-\sqrt{0}$ 14. $\sqrt{28}$ 15. $\sqrt{56}$ 16. $\sqrt{4+9+3}$

514 **Module 4** Quadratic Functions

Spiral REVIEW

Multiply—Monomial with a Binomial

17. $6(y^2 + 3)$	18. $-9y(3y + 2)$	19. $3(7b - 5a)$
20. $-2c(7c - 1)$	21. $3(x^2 - 9)$	22. $-2(3x - 6)$

17. $6y^2 + 18$

18. $-27y^2 - 18y$

19. $21b - 15a$

20. $-14c^2 + 2c$

21. $3x^2 - 27$

22. $-6x + 12$

23. A.

	x	+ 4
2x	$2x^2$	8x
- 3	-3x	-12

$2x^2+5x-12$

$(2x - 3)(x +4) = 2x(x + 4) - 3(x + 4)$

$= 2x^2 +8x - 3x - 12$

$= 2x^2 + 5x - 12$

B. Answers may vary

Spiral REVIEW

23. Below are examples of two methods for multiplying two binomials.

A. Use each method to multiply $(2x - 3)$ with $(x + 4)$.

Method 1: Table or Box

	x	-5
x	x^2	$-5x$
3	$3x$	-15

$x^2 - 2x - 15$

Method 2: Double Distribution

$(x + 3)(x - 5) = x(x - 5) + 3(x - 5)$

$= x^2 - 5x + 3x - 15$

$= x^2 - 2x - 15$

$(2x - 3)(x + 4)$

B. Which method do you prefer? Explain your thinking.

24. $x^2 - 6x - 7$

25. $x^2 + 11x + 18$

26. $x^2 - 8x + 15$

27. $x^2 + 6x - 7$

28. $x^2 - 11x + 18$

29. $x^2 + 8x + 15$

Multiply—Binomial with a Binomial

24. $(x + 1)(x - 7)$	25. $(x + 9)(x + 2)$	26. $(x - 5)(x - 3)$
27. $(x - 1)(x + 7)$	28. $(x - 9)(x - 2)$	29. $(x + 5)(x + 3)$

Packaging handout – 7 grids per student