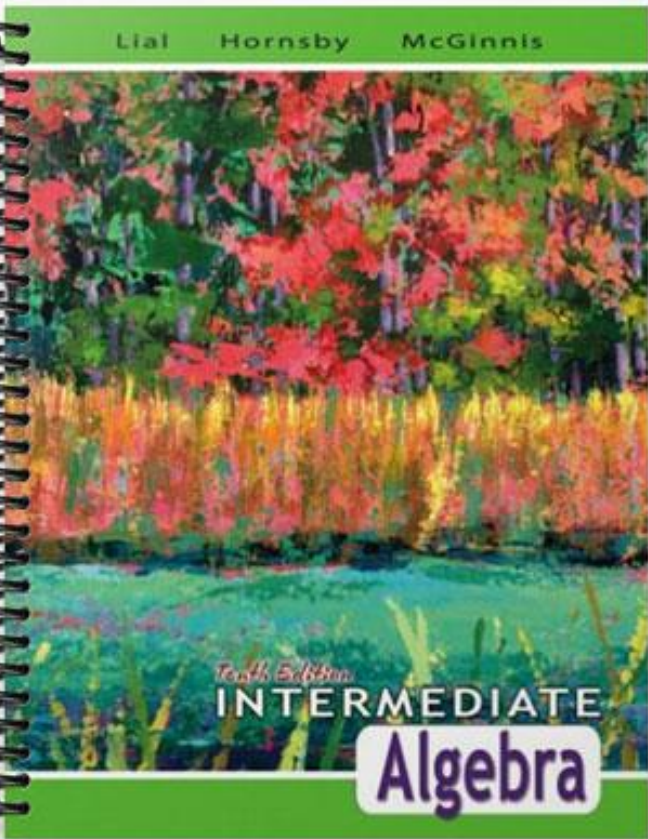


**TEST BANK**

Lial Hornsby McGinnis



*Fourth Edition*  
**INTERMEDIATE**  
**Algebra**

PRINTED  
TEST BANK

LAURA WHEEL

INTERMEDIATE ALGEBRA  
TENTH EDITION

Margaret L. Lial

*American River College*

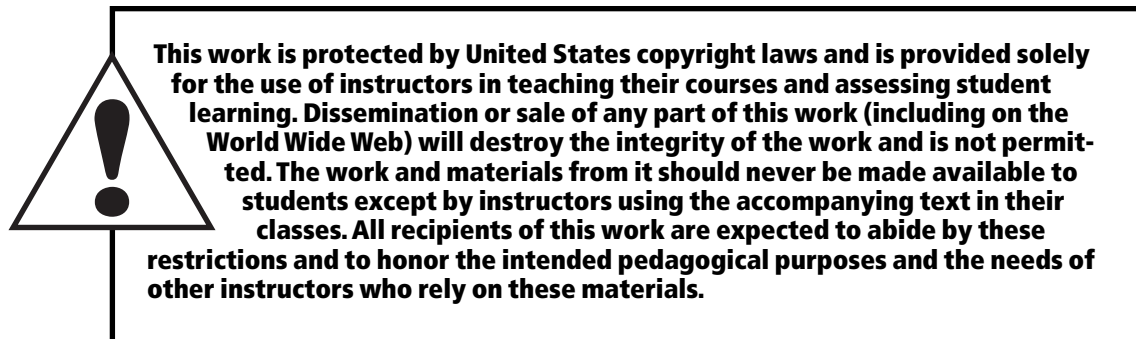
John Hornsby

*University of New Orleans*

Terry McGinnis



Boston San Francisco New York  
London Toronto Sydney Tokyo Singapore Madrid  
Mexico City Munich Paris Cape Town Hong Kong Montreal



Reproduced by Pearson Addison-Wesley from electronic files supplied by the author.

Copyright © 2008 Pearson Education, Inc.  
Publishing as Pearson Addison-Wesley, 75 Arlington Street, Boston, MA 02116.

All rights reserved. This manual may be reproduced for classroom use only. Printed in the United States of America.

ISBN-13: 978-0-321-44480-6  
ISBN-10: 0-321-44480-9

1 2 3 4 5 6 BB 10 09 08 07



# Contents

Diagnostic Pretest.....	1
Chapter Test Forms.....	13
Final Examinations.....	297
Answers to Chapter Test Forms and Final Exams.....	317
Conversion Guide.....	381

*For additional practice exercises organized according to the text's objectives, please see the Additional Skill and Drill Manual (ISBN 0-321-44637-2), available upon request from your Pearson Sales Representative.*



**DIAGNOSTIC PRETESTS  
AND  
ANSWERS**



**DIAGNOSTIC PRETEST, FORM A INTERMEDIATE ALGEBRA**

NAME \_\_\_\_\_ SECTION \_\_\_\_\_

1. Identify all integers in the list  
 $-\frac{3}{5}, 6, -\sqrt{7}, -\frac{18}{2}, 2.6, \sqrt{25}, -11, -\pi, 0$  1. \_\_\_\_\_

2. Find  $-51 - 28$ . 2. \_\_\_\_\_

3. If  $x = -4, y = 2,$  and  $z = -3,$  find  $\frac{3yz - 2x}{y - z}$ . 3. \_\_\_\_\_

*For Exercises 4-6, write the smallest number in each group of numbers.*

4.  $9, -3.2, -8, 0.1$  4. \_\_\_\_\_

5.  $-\sqrt{9}, -\frac{9}{2}, -\sqrt{16}, -\frac{1}{4}$  5. \_\_\_\_\_

6.  $-|-12|, |-6|, -|4|, |1|$  6. \_\_\_\_\_

*For Exercises 7-8, simplify the expression.*

7.  $9a - 2a - 11a$  7. \_\_\_\_\_

8.  $-4(2p - 1) - 2(4p + 5)$  8. \_\_\_\_\_

*For Exercises 9-11, solve the equation or inequality.*

9.  $6x - 5 = -17$  9. \_\_\_\_\_

10.  $4n - (7n + 3) = -n$  10. \_\_\_\_\_

11.  $3z - 4 < 5z$  11. \_\_\_\_\_

*For Exercises 12-16, perform the indicated operation.*

12.  $-4ab^2(5a^2b^3 - 3ab^5)$  12. \_\_\_\_\_



2 DIAGNOSTIC PRETEST, FORM A

13.  $(2y^3 + y^2 - 7) + (3y^3 + 2y^2 - y + 7)$  13. \_\_\_\_\_

14.  $(2n + 5)(3n - 8)$  14. \_\_\_\_\_

15.  $(x - 6y)^2$  15. \_\_\_\_\_

16.  $\frac{x^3 - 7x^2 + 6x + 17}{x - 5}$  16. \_\_\_\_\_

**For Exercises 17-19. Factor the expression completely.**

17.  $25a^2 - 49b^2$  17. \_\_\_\_\_

18.  $t^2 + 5t - 36$  18. \_\_\_\_\_

19.  $4y^2 - 15y - 4$  19. \_\_\_\_\_

20. Simplify:  $\left(\frac{a^{-3}b^2}{a^{-6}b^{-3}}\right)^{-4}$  20. \_\_\_\_\_

21. Multiply:  $\frac{n^2 - 4n + 4}{16n^3} \cdot \frac{8n}{n - 2}$  21. \_\_\_\_\_

22. Divide:  $\frac{u^2 - v^2}{u^2 + 2uv + v^2} \div \frac{u^2 - 3uv + 2v^2}{5uv - 10v^2}$  22. \_\_\_\_\_

23. Write  $\frac{1}{4a} + \frac{2}{3b} - \frac{7}{12ab}$  as a single fraction. 23. \_\_\_\_\_

**For Exercises 24-25, solve the equation.**

24.  $2y^2 + y - 21 = 0$  24. \_\_\_\_\_

25.  $-\frac{3}{n} + \frac{10}{n^2} = 1$  25. \_\_\_\_\_

26. Solve the system:  $\begin{matrix} 2x + 3y = 2 \\ 3x + y = 10 \end{matrix}$  26. \_\_\_\_\_

27. Solve  $A = \frac{4(B - C)}{D}$  for B. 27. \_\_\_\_\_

28. Find the square roots of  $121z^{10}$ .

28. \_\_\_\_\_

29. Multiply:  $2\sqrt{15} \cdot 3\sqrt{5}$

29. \_\_\_\_\_

30. Subtract:  $\sqrt{32} - \sqrt{72}$

30. \_\_\_\_\_

31. Simplify:  $\frac{4}{\sqrt{24}}$

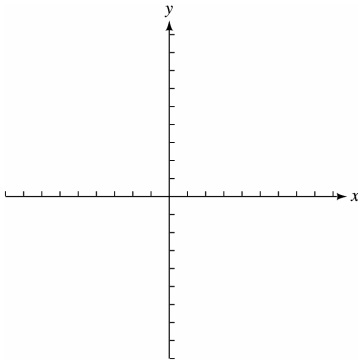
31. \_\_\_\_\_

32. A garden is in the shape of a rectangle with a perimeter of 72 meters. The length is 3 meters more than twice the width. Find the length of the garden.

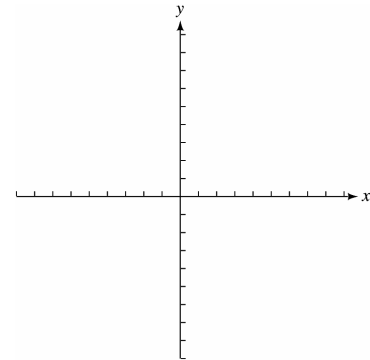
32. \_\_\_\_\_

***For Exercises 33-35, graph the given equation.***

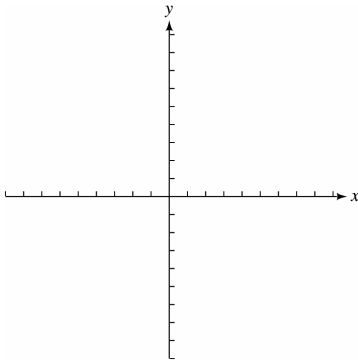
33.  $y - 3x = -2$



34.  $y + 4 = 0$



35.  $y = 5 - x^2$



**DIAGNOSTIC PRETEST, FORM B      INTERMEDIATE ALGEBRA**

NAME \_\_\_\_\_ SECTION \_\_\_\_\_

2. Identify all integers in the list

$$-\frac{14}{3}, -3, -\sqrt{5}, \frac{0}{8}, 1.5, \sqrt{9}, 7, \pi, -12$$

(a)  $-3, 7, -12$

(b)  $-3, \frac{0}{8}, 7, -12$

(c)  $-3, -12$

(d)  $-3, \frac{0}{8}, \sqrt{9}, 7, -12$       1. \_\_\_\_\_

2. Find
- $-51 - 28$
- .

(a) 23

(b) -23

(c) 79

(d) -79

2. \_\_\_\_\_

3. If
- $x = -4$
- ,
- $y = 2$
- , and
- $z = -3$
- , find
- $\frac{3yz - 2x}{y - z}$
- .

(a) 26

(b) -10

(c) -2

(d)  $\frac{26}{5}$

3. \_\_\_\_\_

***For Exercises 4-6, find the smallest number in each group.***

4. (a) 0.1      (b) -8      (c) 9      (d) -3.9      4. \_\_\_\_\_

5. (a)
- $-\sqrt{9}$
- (b)
- $-\frac{9}{2}$
- (c)
- $-\frac{1}{4}$
- (d)
- $-\sqrt{16}$
5. \_\_\_\_\_

6. (a)
- $|1|$
- (b)
- $|-6|$
- (c)
- $-|4|$
- (d)
- $-|-12|$
6. \_\_\_\_\_

***For Exercises 7-8, simplify the expression.***

- 7.
- $9a - 2a - 11a$

(a)  $-18a$

(b)  $-4a$

(c)  $4a$

(d) 0

7. \_\_\_\_\_

- 8.
- $-4(2p - 1) - 2(4p + 5)$

(a) -6

(b)  $-16p - 6$

(c)  $-16p + 6$

(d) 6

8. \_\_\_\_\_

**For Exercises 9-11, solve the equation or inequality.**

10.  $6x - 5 = -17$

- (a)  $\{-2\}$       (b)  $\left\{-\frac{11}{3}\right\}$       (c)  $\left\{\frac{11}{3}\right\}$       (d)  $\{2\}$       9. \_\_\_\_\_

10.  $4n - (7n + 3) = -n$

- (a)  $\{3\}$       (b)  $\{-3\}$       (c)  $\left\{-\frac{3}{2}\right\}$       (d)  $\left\{\frac{3}{2}\right\}$       10. \_\_\_\_\_

11.  $3z - 4 < 5z$

- (a)  $(-\infty, 2)$       (b)  $(2, \infty)$       (c)  $(-\infty, -2)$       (d)  $(-2, \infty)$       11. \_\_\_\_\_

**For Exercises 12-16, perform the indicated operation.**

12.  $-4ab^2(5a^2b^3 - 3ab^5)$

- (a)  $-9a^3b^5 + 20a^2b^7$       (b)  $-9a^3b^5 - 7a^2b^7$   
 (c)  $-20a^3b^5 + 12a^2b^7$       (d)  $-20a^2b^6 + 12ab^{10}$       12. \_\_\_\_\_

13.  $(2y^3 + y^2 - 7) + (3y^3 + 2y^2 - y + 7)$

- (a)  $5y^6 + 3y^4 - y$       (b)  $5y^3 + 3y^2 - y - 14$   
 (c)  $5y^3 + 3y^2 + y + 14$       (d)  $5y^3 + 3y^2 - y$       13. \_\_\_\_\_

14.  $(2n + 5)(3n - 8)$

- (a)  $6n^2 + n - 40$       (b)  $6n^2 - 31n - 40$   
 (c)  $6n^2 - n - 40$       (d)  $6n^2 - 40$       14. \_\_\_\_\_

15.  $(x - 6y)^2$

- (a)  $x^2 - 36y^2$       (b)  $x^2 + 12xy + 36y^2$   
 (c)  $x^2 + 36y^2$       (d)  $x^2 - 12xy + 36y^2$       15. \_\_\_\_\_

6 DIAGNOSTIC PRETEST, FORM B

16.  $\frac{x^3 - 2x^2 - 5x + 6}{x - 3}$

(a)  $x^2 + x - 2$

(b)  $x^2 - x - 2$

(c)  $x^2 + x + 2$

(d)  $x^2 - x + 2$

16. \_\_\_\_\_

**For Exercises 17-19. Factor the expression completely.**

17.  $25a^2 - 49b^2$

(a)  $(5a - 7b)^2$

(b)  $(5a - 7b)(5a + 7b)$

(c)  $(5a - 7)(5a + 7b^2)$

(d) Cannot be factored

17. \_\_\_\_\_

18.  $t^2 + 5t - 36$

(a)  $(t - 3)(t + 12)$

(b)  $(t + 3)(t - 12)$

(c)  $(t + 4)(t - 9)$

(d)  $(t - 4)(t + 9)$

18. \_\_\_\_\_

19.  $4y^2 - 15y - 4$

(a)  $(2y + 4)(2y - 1)$

(b)  $(2y + 1)(2y - 4)$

(c)  $(4y - 1)(y + 4)$

(d)  $(4y + 1)(y - 4)$

19. \_\_\_\_\_

20. Simplify:  $\left(\frac{a^{-3}b^2}{a^{-6}b^{-3}}\right)^{-4}$

(a)  $\frac{1}{a^{12}b^{20}}$

(b)  $\frac{a^{12}b^{-8}}{a^{24}b^{12}}$

(c)  $a^{12}b^{20}$

(d)  $a^3b^5$

20. \_\_\_\_\_

21. Multiply:  $\frac{n^2 - 4n + 4}{16n^3} \cdot \frac{8n}{n - 2}$

(a)  $\frac{n - 2}{-4n}$

(b)  $\frac{n - 2}{2n^2}$

(c)  $\frac{n + 2}{2n^2}$

(d)  $\frac{1}{2n^2}$

21. \_\_\_\_\_

22. Divide:  $\frac{u^2 - v^2}{u^2 + 2uv + v^2} \div \frac{u^2 - 3uv + 2v^2}{5uv - 10v^2}$

(a)  $\frac{5v(u-v)}{(u+v)^2}$                       (b)  $\frac{5v}{u+v}$

(c)  $5v$                                       (d)  $\frac{(u-v)^2}{u+v}$                       22. \_\_\_\_\_

23. Write  $\frac{1}{4a} + \frac{2}{3b} - \frac{7}{12ab}$  as a single fraction.

(a)  $-\frac{1}{3ab}$                                       (b)  $\frac{3b-8a+7}{12ab}$

(c)  $\frac{3b+8a-7}{12ab}$                                       (d)  $\frac{3b+4a-7}{1}$                       23. \_\_\_\_\_

**For Exercises 24-25, solve the equation.**

24.  $2y^2 + y - 21 = 0$

(a)  $\left\{-3, \frac{7}{2}\right\}$                                       (b)  $\left\{-\frac{7}{2}, 3\right\}$

(c)  $\{-3, 7\}$                                       (d)  $\{-7, 3\}$                       24. \_\_\_\_\_

25.  $\frac{3}{n} - \frac{10}{n^2} = 1$

(a)  $\{-2, 5\}$                                       (b)  $\{-5, 2\}$

(c)  $\left\{-\frac{1}{2}, \frac{1}{5}\right\}$                                       (d)  $\left\{-\frac{1}{5}, \frac{1}{2}\right\}$                       25. \_\_\_\_\_

26. Solve the system:  $2x + 3y = 2$   
 $3x + y = 10$

(a)  $\{(4, -2)\}$                                       (b)  $\{(-2, 4)\}$

(c)  $\{(1, 0)\}$                                       (d)  $\left\{\left(\frac{10}{3}, 0\right)\right\}$                       26. \_\_\_\_\_

8 DIAGNOSTIC PRETEST, FORM B

27. Solve  $A = \frac{4(B-C)}{D}$  for  $B$ .

(a)  $B = -\frac{DAC}{4}$

(b)  $B = \frac{1}{DA+C}$

(c)  $B = \frac{4}{DA+4C}$

(d) None of these

27. \_\_\_\_\_

28. Find the square roots of  $256x^8$ .

(a)  $16x^4$  and  $-16x^4$

(b)  $16x^8$  and  $-16x^8$

(c)  $4x^4$  and  $-4x^4$

(d)  $4x^8$  and  $-4x^8$

28. \_\_\_\_\_

29. Multiply:  $2\sqrt{15} \cdot 3\sqrt{5}$ .

(a)  $12\sqrt{5}$

(b)  $15\sqrt{2}$

(c)  $30\sqrt{3}$

(d)  $2\sqrt{30}$

29. \_\_\_\_\_

30. Subtract:  $\sqrt{32} - \sqrt{72}$ .

(a)  $-2\sqrt{10}$

(b)  $-2\sqrt{2}$

(c)  $2\sqrt{2}$

(d)  $2\sqrt{10}$

30. \_\_\_\_\_

31. Simplify:  $\frac{4}{\sqrt{24}}$

(a)  $\frac{2}{\sqrt{6}}$

(b)  $\frac{\sqrt{6}}{6}$

(c)  $\frac{2\sqrt{6}}{3}$

(d)  $\frac{\sqrt{6}}{3}$

31. \_\_\_\_\_

32. A garden is in the shape of a rectangle with a perimeter of 72 meters. The length is 3 meters more than twice the width. Find the length of the garden.

(a) 11 meters (b) 13 meters (c) 23 meters (d) 25 meters

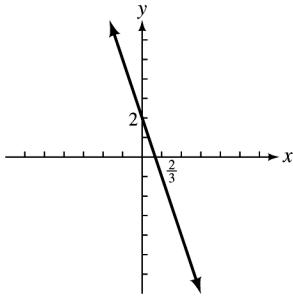
32. \_\_\_\_\_

For Exercises 33-35, select the graph of the given equation.

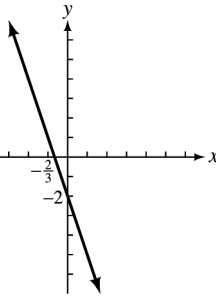
33.  $y - 3x = -2$

33. \_\_\_\_\_

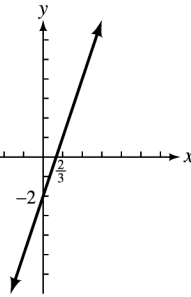
(a)



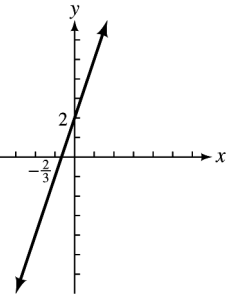
(b)



(c)



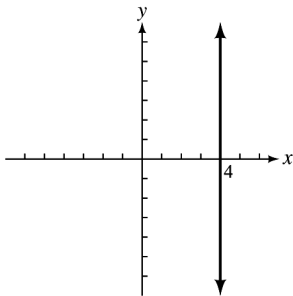
(d)



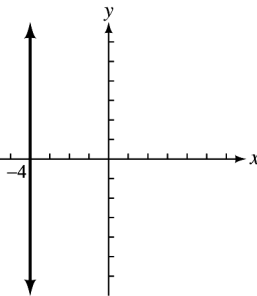
34.  $y + 4 = 0$

34. \_\_\_\_\_

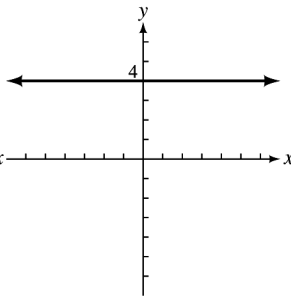
(a)



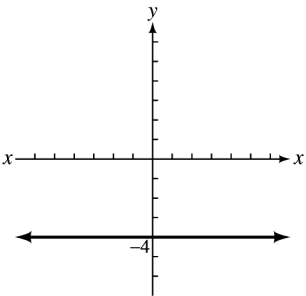
(b)



(c)



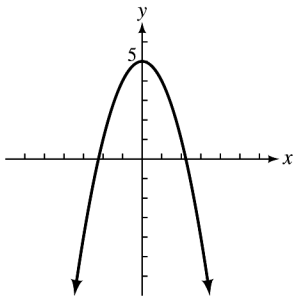
(d)



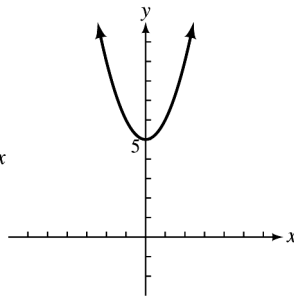
35.  $y = 5 - x^2$

35. \_\_\_\_\_

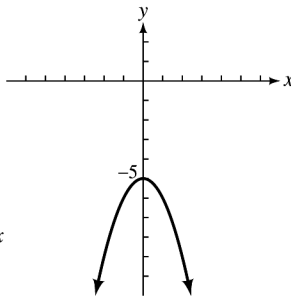
(a)



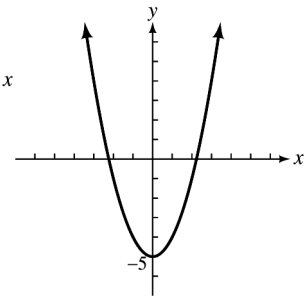
(b)



(c)



(d)





**Answers to Diagnostic Pretests****Diagnostic Pretest, Form A**

1.  $6, -\frac{18}{2}, \sqrt{25}, -11, 0$

2.  $-79$

3.  $-2$

4.  $-8$

5.  $-\frac{9}{2}$

6.  $-|-12|$

7.  $-4a$

8.  $-16p-6$

9.  $\{-2\}$

10.  $\left\{-\frac{3}{2}\right\}$

11.  $(-2, \infty)$

12.  $-20a^3b^5 + 12a^2b^7$

13.  $5y^3 + 3y^2 - y$

14.  $6n^2 - n - 40$

15.  $x^2 - 12xy + 36y^2$

16.  $x^2 - 2x - 4 - \frac{3}{x-5}$

17.  $(5a+7b)(5a-7b)$

18.  $(t-4)(t+9)$

19.  $(4y+1)(y-4)$

20.  $\frac{1}{a^{12}b^{20}}$

21.  $\frac{n-2}{2n^2}$

22.  $\frac{5v}{u+v}$

23.  $\frac{3b+8a-7}{12ab}$

24.  $\left\{-\frac{7}{2}, 3\right\}$

25.  $\{-5, 2\}$

26.  $(4, -2)$

27.  $B = \frac{AD+4C}{4}$

28.  $11z^5, -11z^5$

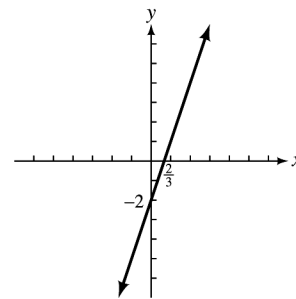
29.  $30\sqrt{3}$

30.  $-2\sqrt{2}$

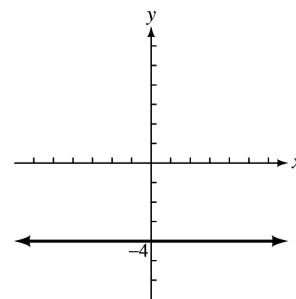
31.  $\frac{\sqrt{6}}{3}$

32. 25 meters

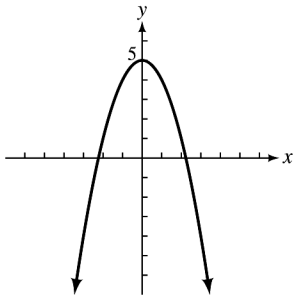
33.



34.



35.



**Diagnostic Pretest, Form B**

- |       |       |
|-------|-------|
| 1. D  | 30. B |
| 2. D  | 31. D |
| 3. C  | 32. D |
| 4. B  | 33. C |
| 5. B  | 34. D |
| 6. D  | 35. A |
| 7. B  |       |
| 8. B  |       |
| 9. A  |       |
| 10. C |       |
| 11. D |       |
| 12. C |       |
| 13. D |       |
| 14. C |       |
| 15. D |       |
| 16. A |       |
| 17. B |       |
| 18. D |       |
| 19. D |       |
| 20. A |       |
| 21. B |       |
| 22. B |       |
| 23. C |       |
| 24. B |       |
| 25. B |       |
| 26. A |       |
| 27. D |       |
| 28. A |       |
| 29. C |       |

