

BIG IDEAS MATH[®]

RED

The *Assessment Book* contains additional assessments that may be used by the teacher.

Assessment Book

- Pre-Course Test with Item Analysis
- Quizzes
- Chapter Tests
- Standardized Test Practice with Item Analysis
- Alternative Assessments
- End-of-Course Tests

Here is a list of assessments available in the book.



The front matter contains a table of contents with page references.



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The front matter also contains a description of each assessment.

About the Assessment Book

Pre-Course Test with Item Analysis

The Pre-Course Test covers material that students should be familiar with from earlier courses. The Item Analysis can be used to determine topics that need to be reviewed.

Quizzes

The Quizzes provide ongoing assessment of student understanding. There are two quizzes for each chapter.

Chapter Tests

The Chapter Tests provide assessment of student understanding of key concepts taught in the chapter. There are two tests for each chapter.

Standardized Test Practice with Item Analysis

The Standardized Test Practice gives students practice answering questions in the State Assessment format. The assessments cover material from the current chapter as well as earlier chapters of the textbook. Questions are presented in multiple choice, gridded response, short response, and extended response format. The Item Analysis can be used to identify common errors and assess student understanding.

Alternative Assessment with Scoring Rubric

Each Alternative Assessment includes at least one multi-step problem that combines a variety of concepts from the chapter. Students are asked to explain their solutions, write about the mathematics, or compare and analyze different situations.

End-of-Course Tests

The End-of-Course Tests cover the key concepts taught throughout the course and can be used as a year-end exam or as a practice test to help students prepare for the Florida Assessment.

Gridded Response Answer Sheet

The Gridded Response Answer Sheets can be used to help students practice completing gridded response questions.

Name _____ Date _____

Grade 7 Pre-Course Test

Multiply or divide.

1. $4.5 \div 0.9$ 2. $34.1 + 5.5$ 3. $2.7(7.8)$
 4. $\frac{6}{7} \cdot \frac{5}{9}$ 5. $\frac{4}{5} + \frac{8}{11}$ 6. $\frac{3}{8} \cdot \frac{4}{9}$

7. You need to buy 5 notebooks for your classes at school. Each notebook costs \$2.79. What is the total cost of 5 notebooks before tax?

Copy and complete the statement using $<$, $>$, or $=$.

8. $\frac{4 \text{ tables}}{3 \text{ groups}} ? \frac{6 \text{ tables}}{5 \text{ groups}}$ 9. $\frac{66 \text{ pages}}{2 \text{ hours}} ? \frac{99 \text{ pages}}{3 \text{ hours}}$

10. You have \$50 in your savings account. Each week you deposit \$5 in your account. Write an expression that models the situation.

Solve the equation.

11. $5x = 65$ 12. $2x + 3 = 11$ 13. $3x - 5 = 13$

Solve the inequality.

14. $4x < 104$ 15. $5x - 1 > 34$ 16. $9x + 2 \geq 47$

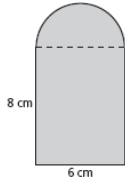
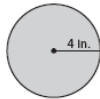
17. The formula for converting degrees Celsius C to degrees Fahrenheit F is $F = \frac{9}{5}C + 32$. What is 25 degrees Celsius in degrees Fahrenheit?

Tell whether the two expressions are equivalent.

18. $5 + 3b$; $3b + 5$ 19. $5(h + 7)$; $5h + 35$ 20. $(2 - c)4$; $2 - 4c$

In Exercises 21 and 22, use the figure at the right.

21. What is the perimeter of the figure?
 22. What is the area of the figure?
 23. What is the circumference of the circle?
 Use 3.14 for π .



- Answers**
 1. _____
 2. _____
 3. _____
 4. _____
 5. _____
 6. _____
 7. _____
 8. _____
 9. _____
 10. _____
 11. _____
 12. _____
 13. _____
 14. _____
 15. _____
 16. _____
 17. _____
 18. _____
 19. _____
 20. _____
 21. _____
 22. _____
 23. _____

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Big Ideas Math Red
 Assessment Book 1

Grade 7 Pre-Course Test Item Analysis

Item Number	Skills
1	dividing decimals
2	dividing decimals
3	multiplying decimals
4	multiplying fractions
5	dividing fractions
6	multiplying fractions
7	multiplying decimals
8	comparing rates
9	comparing rates
10	writing expressions to represent situations
11	solving one-step equations
12	solving two-step equations
13	solving two-step equations
14	solving one-step inequalities
15	solving two-step inequalities
16	solving two-step inequalities
17	using a formula to solve a problem
18	apply the comm. property
19	apply the distributive property
20	apply the distributive property
21	finding the perimeter of a composite figure
22	finding the area of a composite figure
23	find circumference of a circle

Item Number	Skills
24	converting decimals to percents
25	converting decimals to percents
26	converting decimals to percents
27	converting percents to decimals
28	converting percents to decimals
29	converting percents to decimals
30	converting fractions to percents
31	ordering rational numbers
32	ordering rational numbers
33	ordering rational numbers
34	estimating product of decimals
35	estimating product of decimals
36	estimating sum of decimals
37	finding measures of central tendency and range
38	finding measures of central tendency and range
39	Determine measure of central tendency
40	multiplying whole numbers
41	dividing whole numbers
42	dividing whole numbers
43	converting fractions to decimals
44	converting fractions to decimals
45	converting fractions to decimals

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Big Ideas Math Red
 Assessment Book 3

The *Pre-Course Test* covers material that students should be familiar with from earlier courses.

The *Pre-Course Test Item Analysis* can be used to determine topics that need to be reviewed.

Name _____ Date _____

Chapter 1 Test A

Copy and complete the statement using $<$, $>$, or $=$.

1. $|-6|$ $\underline{\quad ? \quad}$ 6 2. 0 $\underline{\quad ? \quad}$ $|3|$ 3. $|-5|$ $\underline{\quad ? \quad}$ $|-9|$

4. One fish is 4 feet below sea level. Another fish is 3 feet below sea level. Write each position as an integer. Which integer is greater?

Add.

5. $6 + (-3)$ 6. $8 + (-1) + (-3)$

7. You start hiking at an elevation that is 80 meters below base camp. You increase your elevation by 42 meters. What is the new elevation with respect to base camp?

Subtract.

8. $10 - (-3)$ 9. $-9 - (-9)$

10. The temperature falls from 3°C to -4°C . What is the difference in these temperatures?

Multiply.

11. $7 \cdot (-4)$ 12. $-2(-5)(-3)$

Divide, if possible.

13. $-12 \div (-4)$ 14. $-18 \div 6$

15. $\frac{-16}{8}$ 16. $0 \div (-10)$

Evaluate the expression when $r = -7$, $s = 2$, and $t = -5$.

17. $s + t$ 18. $t + s - r$

19. $s^2 - rt$ 20. $\left| \frac{r+1}{s} \right|$

Use mental math to solve the equation.

21. $n + (-8) = 5$ 22. $8 - d = 14$

Find the next two numbers in the pattern.

23. 6, -12, 24, -48, ... 24. -2, 20, -200, 2000, ...

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____

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Test A

Name _____ Date _____

Chapter 1 Test B

Order the values from least to greatest.

1. $|-3|$, $|-5|$, -4 , 7 , $|0|$ 2. $|-6|$, 10 , -2 , -6 , $|-7|$

3. The temperature at St. Louis, Missouri, is 31°F . The temperature at Duluth, Minnesota, is -29°F . Is the temperature at St. Louis or Duluth closer to 0°F ?

Add.

4. $(-124) + 25 + (-87)$ 5. $97 + (-118) + 0$

6. The water level is 3 feet below your dock. The tide goes out and the water level lowers 1 foot. A storm surge comes in and the water level rises 2 feet. Write an integer to indicate the new water level.

Subtract.

7. $-17 - (-56) + 14$ 8. $15 - (-98) + (-150)$

Multiply.

9. $-12 \cdot 5 \cdot (-3)$ 10. $-2(-21)(-5)$

11. Two integers, n and p , have a product of -24 . What is the largest possible sum of n and p ? Explain how you found your answer.

Divide, if possible.

12. $-78 \div (-6)$ 13. $-65 \div 0$

Evaluate the expression.

14. $-13 + (-56) + 14 + 9$ 15. $-16 \cdot 3 - (-36) + 12$

Evaluate the expression when $r = -7$, $s = 2$, and $t = -5$.

16. $|s - t|$ 17. $r^3 - st$

18. $\frac{s - t}{r}$ 19. $\left| \frac{rt}{s^2} \right|$

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. See left.
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____

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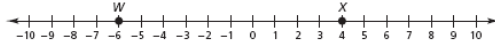
Test B

The chapter tests provide assessment of student understanding of key concepts taught in the chapter. There are two tests for each chapter. The exercises are similar to the *Practice and Problem Solving* in the exercise sets. *Chapter Test A* is easier than *Chapter Test B*.

Name _____ Date _____

Chapter 1 Standardized Test Practice

1. Two points are plotted on the number line below.



Which of the following has the **greatest** value?

- A. $W - X$ C. $W + X$
B. $X - W$ D. $X \cdot W$

2. **GRIDDED RESPONSE** What is the value of the expression below?

$$12 - 6 \cdot 3$$

3. The temperature at 6:00 P.M. was 15°C . The temperature dropped 2°C per hour. What was the temperature at 4:00 A.M.?

- F. -5°C H. 1°C
G. -1°C I. 5°C

4. Which list shows the integers in order from **least** to **greatest**?

- A. $-8, -5, 0, 2, 6$ C. $-5, -8, 0, 2, 6$
B. $0, 2, -5, 6, -8$ D. $0, -8, -5, 2, 6$

5. Which expression represents the associative property of addition?

- F. $-3 + (-5 + 8) = [-3 + (-5)] + 8$
G. $-3 + (-5 + 8) = (-5 + 8) + (-3)$
H. $-3(-5 + 8) = -3(-5) + -3(8)$
I. $-3 + (-5 + 0) = -3 + (-5)$

6. What is the value of the expression below?

$$|48 + (-6)| + |-35 + 7|$$

- A. -13 C. 3
B. -3 D. 13

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Chapter 1 Standardized Test Practice Item Analysis

1. A. The student thinks that the difference is 10 and is therefore greatest.
B. Correct answer
C. The student thinks that the sum must be positive and is therefore greatest.
D. The student thinks that the product is 24 and is therefore greatest.
2. Correct answer: -6
Common errors:
 - The student subtracts the smaller number from the larger product, getting an answer of 6.
 - The student subtracts before multiplying, getting an answer of 18.
3. F. Correct answer
G. The student thinks that there are only 8 hours between 6:00 P.M. and 4:00 A.M. and finds $15 - 2(8)$.
H. The student thinks that there are only 8 hours between 6:00 P.M. and 4:00 A.M. and thinks that $15 - 2(8) = 1$.
I. The student thinks that $15 - 2(10) = 5$.
4. A. Correct answer
B. The student disregards the signs and orders the numbers by magnitude only.
C. The student thinks that -5 is less than -8 .
D. The student thinks that 0 is less than all other integers.
5. F. Correct answer
G. The student misidentifies the commutative property of addition.
H. The student misidentifies the distributive property.
I. The student misidentifies the addition property of zero.
6. A. The student thinks that quantities inside absolute value bars are always negative and finds the sum of -8 and -5 .
B. The student does not find the absolute value of the first expression and finds the sum of -8 and 5.
C. The student thinks that $48 + (-6) = 8$ because 48 is larger than 6. The student also ignores the absolute value bars and finds the sum of 8 and -5 .
D. Correct answer
E. The student multiplies by the divisor instead of its reciprocal.
F. The student multiplies by the divisor instead of its reciprocal. The student also multiplies only the fractional part of the dividend by the divisor and adds this product to 4.
G. The student multiplies only the fractional part of the dividend by the reciprocal of the divisor and adds this product to 4.
H. Correct answer

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The *Standardized Test Practice* gives students practice answering questions in the State Assessment format. The assessments cover material from the current chapter as well as earlier chapters of the textbook. Questions are presented in multiple choice, gridded response, short response, and extended response format.

The *Standardized Test Practice Item Analysis* can be used to identify common errors and assess students understanding.

Name _____ Date _____

Chapter 1 Alternative Assessment

1. Your teacher has asked you to help Alec, a transfer student, who missed the teaching of operations with integers. You agree to help him and you plan to work together at the library after school. You will not have any counters, so you decide to use number lines to introduce Alec to the concepts of the four operations with integers. After that, you will explain the rules for each operation.

Write a description of how you will help Alec. Include some sample problems you will do with Alec, the number lines, and how you will present the rules for each operation.

2. Of the 26 letters in the alphabet, 15 are drawn with only line segments. For this activity, you will plot 4 points and determine which of the 15 letters can be drawn using those 4 points and 2 or more line segments.

a. Solve the equations.

$$a = -2 \times 2 \quad -15 + (-3) = b \quad c = 10 + (-6) \quad -8 - (-3) = d$$

b. Use your answers from part (a) to write the coordinates of the ordered pairs for the following points.

$$B(c, b) \quad C(a, b) \quad G(a, d) \quad Q(c, d)$$

c. Plot and label the ordered pairs in a coordinate plane.

d. Explore what alphabet letters that have no curved lines can be made if you use the points you graphed as endpoints of line segments.

- Each of the four points must be the endpoint of at least one line segment.
- Two or more line segments may be used.
- Any line segment that is used must have two of the points as its endpoints.
- Do not draw a line segment that has an endpoint point other than the four points you graphed.

e. Name the letters that can be formed.

Each *Alternative Assessment* includes at least one multi-step problem that combines a variety of concepts from the chapter. Students are asked to explain their solutions, write about the mathematics, or compare and analyze different situations.

Name _____ Date _____

Chapter 1 Alternative Assessment Rubric

Score	Conceptual Understanding	Mathematical Skills	Work Habits
4	Shows complete understanding of: <ul style="list-style-type: none"> • using a number line as a conceptual model for representing integers • operations with integers • plotting ordered pairs in a coordinate plane 	Explains all integer operation concepts and rules correctly. Operational models represent given operations exactly. Plotting of all ordered pairs is correctly done.	Answers all parts of each problem. Number lines and coordinate plane are drawn carefully and accurately. Work is neat and well organized.
3	Shows nearly complete understanding of: <ul style="list-style-type: none"> • using a number line as a conceptual model for representing integers • operations with integers • plotting ordered pairs in a coordinate plane 	Explains most integer operation concepts and rules correctly. Operational models represent given operations adequately. Plotting of three ordered pairs is correctly done.	Answers all parts of each problem. Number lines and coordinate plane are drawn with some care. Work is neat and easy to follow.
2	Shows some understanding of: <ul style="list-style-type: none"> • using a number line as a conceptual model for representing integers • operations with integers • plotting ordered pairs in a coordinate plane 	Explains some integer operation concepts and rules correctly. Operational models do not represent given operations adequately. Plotting of two ordered pairs is correctly done.	Answers all parts of each problem. Number lines and coordinate plane are not carefully drawn. Work is sloppy and hard to follow.
1	Shows little understanding of: <ul style="list-style-type: none"> • using a number line as a conceptual model for representing integers • operations with integers • plotting ordered pairs in a coordinate plane 	Does not explain integer operation concepts and rules correctly. Operational models do not represent given operations. No ordered pairs are plotted.	Does not answer all parts of each problem. Number lines and coordinate plane are drawn poorly. Work is sloppy and hard to follow.

The *Alternative Assessment Rubric* is a grading rubric that gives the teacher guidance in assessing students' work. The rubric is based on a 4-point scale. It identifies the key elements that students' answers should have in order to earn 1, 2, 3, or 4 points.

Name _____ Date _____

Test 1 End-of-Course Test

Order the numbers from least to greatest.

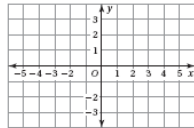
1. $|-2|$, 3 , $|-5|$, -2 , 4 2. $\frac{21}{2}$, -7.5 , $-\frac{36}{5}$, 9.5

Simplify the expression.

3. $4 - (-3)$ 4. $-2 + 15$ 5. $-3(4)$ 6. $27 + (-3)$
 7. $-\frac{1}{6} + \frac{7}{12}$ 8. $0.24 - 1.6$ 9. $2\frac{3}{5} \cdot (-\frac{4}{3})$ 10. $-24 + 3.2$

Plot the ordered pair in the coordinate plane.

11. $A(-2, 4)$
 12. $Q(0, -3)$



13. On an exam you get two points for each question answered correctly, zero points for each question left blank, and lose one point for each question answered incorrectly. What is your total score on the exam if you answer 22 questions correctly, leave 7 questions blank, and answer 5 questions incorrectly?

Solve.

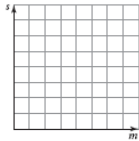
14. $x + 2\frac{4}{5} = 3\frac{1}{6}$ 15. $-0.4a + 1.2 = 3.6$

16. A pencil costs \$0.30 and a pen costs \$0.50. You buy 10 pencils and the total cost is \$7.50. How many pens did you buy?

17. The table shows the time in minutes m to download s songs.

Minutes	1	3	5
Songs	2	6	10

- a. How long does it take to download one song?
 b. Plot the points.
 c. Sketch a line through the points.
 d. Determine the slope of the line. What does the slope of the line represent?



Answers

1. _____
 2. _____
 3. _____
 4. _____
 5. _____
 6. _____
 7. _____
 8. _____
 9. _____
 10. _____
 11. See left.
 12. See left.
 13. _____
 14. _____
 15. _____
 16. _____
 17. a. _____
 b. See left.
 c. See left.
 d. _____

Test 1

Name _____ Date _____

Test 2 End-of-Course Test

Order the numbers from least to greatest.

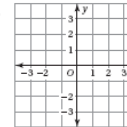
1. $|-4|$, -4 , $|-5|$, -3 , 3 2. $\frac{21}{2}$, -7.5 , $-\frac{36}{5}$, 9.5

Simplify the expression.

3. $2 - (-5)$ 4. $-6 + 11$ 5. $-2.5(6)$ 6. $45 + (-3)$
 7. $-\frac{2}{5} + \frac{7}{10}$ 8. $0.38 - 1.4$ 9. $2\frac{1}{8} \cdot (-\frac{6}{5})$ 10. $-12.88 + 2.8$

Plot the ordered pair in the coordinate plane.

11. $A(-3.5, 2)$
 12. $Q(0, -\frac{5}{2})$



13. On an exam you get two points for each question answered correctly, zero points for each question left blank, and lose one-half point for each question answered incorrectly. What is your total score on the exam if you answer 13 questions correctly, leave 7 questions blank, and answer 5 questions incorrectly?

Solve.

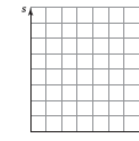
14. $x + 3\frac{2}{5} = 2\frac{1}{6}$ 15. $-0.25a + 3.8 = 4.6$

16. A pencil costs \$0.27 and a pen costs \$0.32. You buy six pencils and the total cost is \$4.18. How many pens did you buy?

17. The table shows the time in minutes m to download s songs.

Minutes	0.5	1.5	2.5
Songs	2	6	10

- a. How long does it take to download one song?
 b. Plot the points.
 c. Sketch a line through the points.
 d. Determine the slope of the line. What does the slope of the line represent?



Answers

1. _____
 2. _____
 3. _____
 4. _____
 5. _____
 6. _____
 7. _____
 8. _____
 9. _____
 10. _____
 11. See left.
 12. See left.
 13. _____
 14. _____
 15. _____
 16. _____
 17. a. _____
 b. See left.
 c. See left.
 d. _____

Test 2

The *End-of-Course Tests* cover the key concepts taught throughout the course and can be used as a year-end exam or as a practice test to help students prepare for the State Assessment.

The *Gridded Response Answer Sheets* can be used to help students practice completing gridded response questions. They are provided near the back of the *Assessment Book*.

Name _____ Date _____

Resource Gridded Response Answer Sheet

-	/	/	/	/	/
•	•	•	•	•	•
0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

-	/	/	/	/	/
•	•	•	•	•	•
0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

-	/	/	/	/	/
•	•	•	•	•	•
0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

-	/	/	/	/	/
•	•	•	•	•	•
0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

At the end of the *Assessment Book*, *Answers* are provided for all assessments.

Answers

Pre-Course Test

1. 5 2. 6.2 3. 21.06
 4. $\frac{30}{63} = \frac{10}{21}$ 5. $\frac{11}{10}$ or $1\frac{1}{10}$ 6. $\frac{1}{6}$
 7. \$13.95 8. > 9. =
 10. $5w + 50$ 11. $x = 13$ 12. $x = 4$
 13. $x = 6$ 14. $x < 26$ 15. $x > 7$
 16. $x \geq 5$ 17. 77° 18. yes
 19. yes 20. no 21. 31.42 cm
 22. 62.13 cm^2 23. 25.12 in.
 24. 89% 25. 237% 26. 0.29%
 27. 0.03 28. 0.78 29. 5.0
 30. 68% 31. $60\%, \frac{5}{8}, 0.64$
 32. $\frac{4}{15}, 0.3, 34\%$ 33. $5.8\%, \frac{14}{25}, 0.57$
 34. 150 35. 8 36. 10
 37. mean: 8; median: 7; mode: 5; range: 11
 38. mean: 5.25; median: 5; mode: none; range: 9
 39. median: 130; The outlier of 409 throws off the mean.
 40. 1008 41. 16 42. 8
 43. 0.65 44. 0.375 45. 0.525

Chapter 1

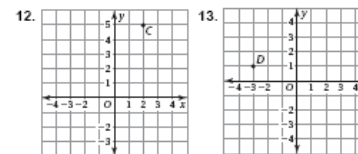
1.1–1.3 Quiz

1. 8 2. 3 3. < 4. <
 5. > 6. = 7. -7 8. 2
 9. -10 10. -7 11. 11 12. 4
 13. -14 14. -1 15. -9 feet
 16. 61 points 17. -1

1.4–1.6 Quiz

1. -40 2. 12 3. -63 4. -3
 5. -4 6. -9 7. 1 8. 12
 9. 6 10. (-2, -3) 11. (1, -4)

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Quadrant I

Quadrant II

14. -8 15. 15 people

Test A

1. = 2. < 3. <
 4. -4, -3; -3 5. 3 6. 4
 7. 38 meters below base camp
 8. 13 9. 0 10. 7°C 11. -28
 12. -30 13. 3 14. -3 15. -2
 16. 0 17. -3 18. 4 19. -31
 20. 3 21. 13 22. -6 23. 96, -192
 24. -20,000, 200,000
 25. a. 22°F ; -15°F b. 37°F c. -21°F d. 0°F
 e. *Sample answer:* You do not know what the temperature was at other points during the day.
 26. a. (4, 1) b. (-2, 3) c. (1, 0)
 d. (3, -2) e. (0, -4) f. (-1, -2)
 27. point F
 28. a. (-3, 1) b. Quadrant II

Test B

1. -4, |0|, |-3|, |-5|, 7
 2. -6, -2, |-6|, |-7|, 10
 3. Duluth 4. -186 5. -21
 6. -2 feet 7. 53 8. -37
 9. 180 10. -210
 11. 23; The pairs of integer factors of -24 are 1 and -24, -1 and 24, 2 and -12, -2 and 12, 3 and -8, -3 and 8, 4 and -6, and -4 and 6. Of these, -1 and 24 have the greatest sum.

Big Ideas Math Red **A1**
 Answers