Name: _____ Date: _____

CHAPTER

Negative Numbers and the Number Line

Lesson 2.1 Negative Numbers

Draw a horizontal number line to represent each set of positive numbers.

1. Whole numbers greater than 5 but less than 10.

Positive numbers are numbers greater than zero.

2. Mixed numbers from 1 to 3. Use an interval of $\frac{1}{4}$ between each pair of mixed numbers.

3. Decimals between 12 and 13. Use an interval of 0.2 between each pair of decimals.

Draw a vertical number line to represent each set of positive numbers.

4. Even numbers greater than 30 but less than 40.

5. Mixed numbers between 6 and 7. Use an interval of $\frac{1}{5}$ between each pair of mixed numbers.

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6. Decimals between 5 and 6. Use an interval of 0.25 between each pair of decimals.

Write a positive or negative number to represent each situation.

Example

A credit of $690 $690

A debit of $325 −$325

30°C above zero 30°C

5°C below zero −5°C

A gain of 20 yards 20 yards

A loss of 15 yards −15 yards

5,300 feet above sea level 5,300 feet

8,950 meters below sea level −8,950 meters

Negative numbers are numbers less than zero.

7. 56°F above zero _____

8. 17,500 feet below sea level _____

9. A credit of $810 _____

10. 48°F below zero _____

11. A loss of 45 yards _____

12. A debit of $1,368 _____

13. A gain of 27 yards _____

14. 8,848 meters above sea level _____

Answer the questions.

The bank account balances of four people are shown in the table.

Johnny	Mark	Susanne	Peter
−$175	$390	$209	−$98

15. Which people have a positive account balance? _____ and _____

16. How much money does Peter owe the bank? _____

17. Who owes the bank the most money? _____

18. Who has the most money in the bank? _____

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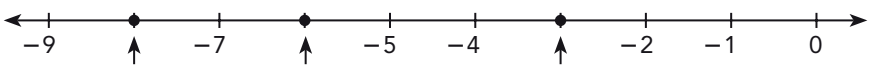
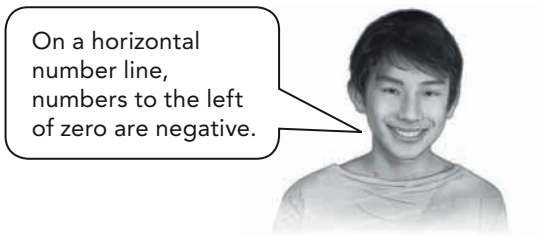
Complete the number lines.

Example



−8 −6 −3



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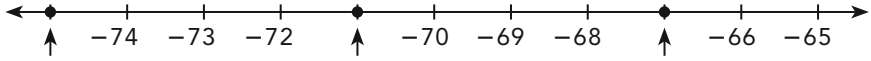

_____ _____ _____

20.

_____ _____ _____

Draw a horizontal number line to represent each set of numbers.

Example

−9, −5, −4, −2, 1, 3, 5

21. −7, −6, −5, −3, −1, 3, 5

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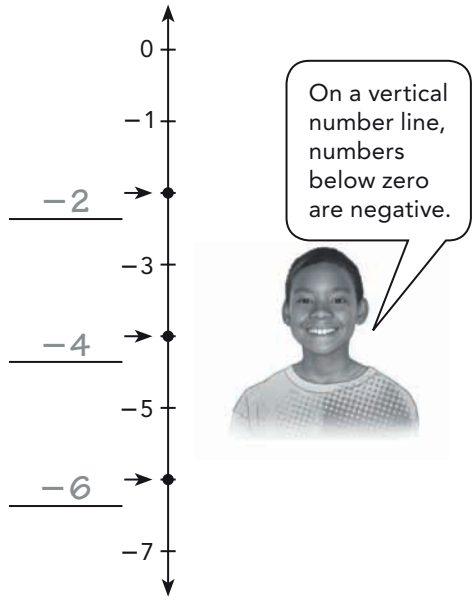
22. −38, −41, −45, −49, −51, −52, −40

Complete the number lines.

Example



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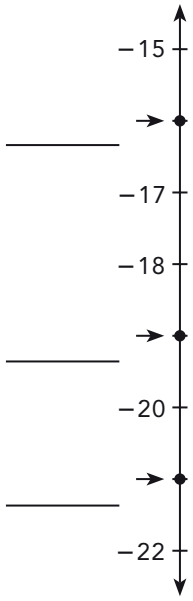

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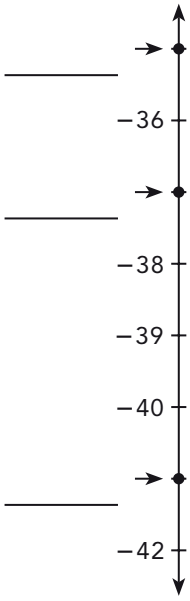

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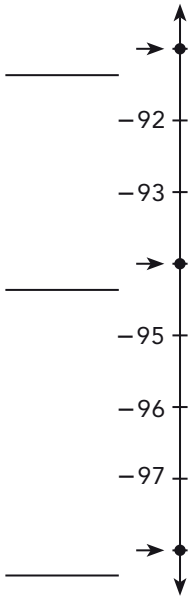

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Draw a vertical number line to represent each set of numbers.

Example

−1, 3, −4, 2, 0, −6, −2

26. −26, −24, −20, −19, −18, −17

27. −41, −46, −40, −38, −43, −45

28. −88, −87, −93, −90, −89, −85

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Write the opposite of each number.

Example

21 -21 -9 9

29. 10 _____ **30.** -15 _____

31. 87 _____ **32.** -62 _____

33. -138 _____ **34.** 251 _____

Compare each pair of numbers using $>$ or $<$. Use a number line to help you.

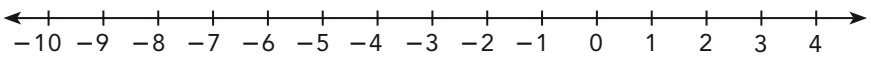
35. 24 ☐ 42 **36.** 2 ☐ $\frac{4}{5}$

37. $\frac{3}{7}$ ☐ $\frac{2}{7}$ **38.** $\frac{7}{9}$ ☐ $\frac{6}{7}$

39. 4.89 ☐ 4.809 **40.** 0.56 ☐ $\frac{5}{8}$

Complete each inequality using $>$ or $<$. Use the number line to help you.

Example

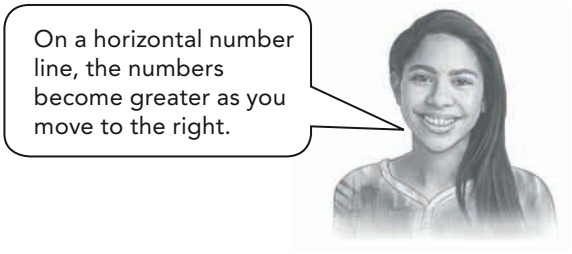


4 $>$ 2

-4 $<$ 3

-1 $>$ -10

-6 $<$ -2



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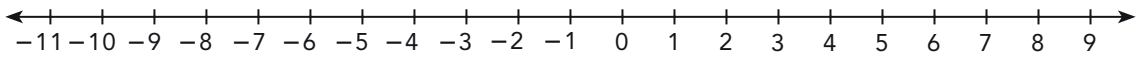

41. 7 ☐ 9

42. −10 ☐ 8

43. −6 ☐ −11

44. −8 ☐ −9

45. 1 ☐ −5

46. −7 ☐ −4

Complete each inequality using > or <.

Example

−16 < 12 23 > −50 −32 < −9

47. −4 ☐ 8

48. −20 ☐ −10

49. −31 ☐ −80

50. 5 ☐ −50

51. −17 ☐ 8

52. −60 ☐ −100

Write an inequality for each statement using > or <.

Example

−15°C is colder than −3°C.

−15°C < −3°C

53. An elevation of −1,600 meters is greater than an elevation of −2,100 meters.

_____

54. A loss of 20 yards is less than a loss of 30 yards.

_____

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55. Linda has a credit of $230 in January and a debit of $610 in February.

_____

56. 20°C is warmer than −30°C.

_____

57. An elevation of −12,800 feet is less than an elevation of −10,650 feet.

_____

58. Compare the bank account balances for June and July.

June	July
$138	−$50

_____

Write a statement to describe each inequality.

Example

−90 meters > −129 meters

An elevation of −90 meters is greater than an elevation of −129 meters.

59. −$190 > −$148

_____

60. −9°C < −6°C

_____

61. −7,500 feet > −9,300 feet

_____

62. −$900 < −$500

_____

63. −1°C > −12°C

_____

17. Method 1

$\underline{15} \times \underline{15} \times \underline{15} = 3{,}375$

So $= \sqrt[3]{3{,}375} = \underline{15}$.

Method 2

$3{,}375$

$= 3 \cdot \underline{3} \cdot \underline{3} \cdot \underline{5} \cdot \underline{5} \cdot \underline{5}$

$= (3 \cdot 5) \cdot (\underline{3} \cdot \underline{5}) \cdot (\underline{3} \cdot \underline{5})$

$= (\underline{3} \cdot \underline{5})^3$

$= \underline{15}^3$

So, $\sqrt[3]{3{,}375} = \underline{15}$.

18. 13 **19.** 18

20. 50 **21.** 42

22. 46 **23.** 60

24. $7^3 = 7 \times \underline{7} \times \underline{7}$

$= \underline{343}$

$8^2 = \underline{8} \times \underline{8}$

$= \underline{64}$

$7^3 + 8^2 = \underline{343} + \underline{64}$

$= \underline{407}$

25. 1,449 **26.** 81

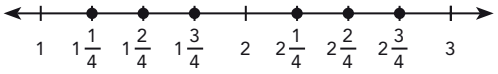
27. 528 **28.** 882

Chapter 2

Lesson 2.1

1.

2.



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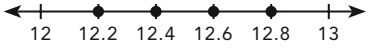


4.

5.

6.

7. 56°F

8. −17,500 feet

9. $810

10. −48°F

11. −45 yards

12. −$1,368

13. 27 yards

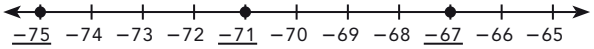
14. 8,848 meters

15. Mark and Susanne

16. $98 **17.** Johnny

18. Mark

19.



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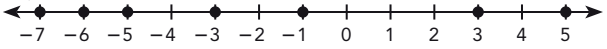

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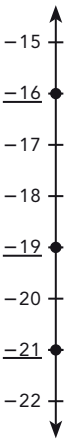

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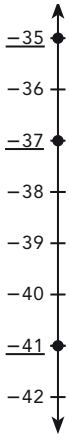

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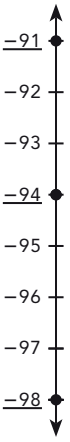

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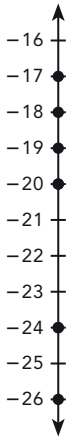

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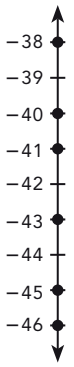

28.

29. −10
30. 15
31. −87
32. 62
33. 138
34. −251
35. <
36. >
37. >
38. <
39. >
40. <
41. <
42. <
43. >
44. >
45. >
46. <
47. <
48. <
49. >
50. >
51. <
52. >
53. −1,600 meters > −2,100 meters
54. −20 > −30
55. $230 > −$610
56. 20°C > −30°C
57. −12,800 feet < −10,650 feet
58. $138 > −$50
59. A debit of $190 is less than a debit of $148.
60. −9°C is colder than −6°C.
61. An elevation of −7,500 feet is greater than an elevation of −9,300 feet.
62. A debit of $900 is less than a debit of $500.
63. −1°C is warmer than −12°C.

Lesson 2.2

1. 12
2. 7
3. 4
4. 10
5. 6
6. 5
7. 23
8. 81
9. 62
10. 39
11. 58
12. 72
13. <
14. >
15. >
16. >
17. >
18. <
19. **a)** Houston
b) Minnesota
c) Houston
d) 20°C
20. **a)** Alice's position = 315 feet
Justin's position = 78 feet
The whale's position = −10 feet
The turtle's position = −1,340 feet
b) Elevation of Alice = 315 feet above sea level
Elevation of Justin = 78 feet above sea level
Elevation of the whale = 10 feet below sea level
Elevation of the turtle = 1,340 feet below sea level
The whale is nearest to the sea level.
c) The whale
d) 88 feet
21. **a)** Arctic Ocean
b) Pacific Ocean and Indian Ocean
c) 2,990 meters
22. **a)** March and April
b) January and February
c) 20 dollars

Chapter 3

Lesson 3.1

1. $3\frac{3}{5}$
2. $4\frac{1}{2}$
3. $3\frac{7}{9}$
4. $\frac{25}{6}$
5. $\frac{37}{7}$
6. $\frac{75}{8}$
7. $\frac{8}{63}$
8. 8
9. $13\frac{1}{3}$
10. $3 \div \frac{1}{8} = \underline{3} \times \underline{8}$
$= \underline{24}$
11. $7 \div \frac{1}{6} = \underline{7} \times \underline{6}$
$= \underline{42}$
12. $8 \div \frac{1}{5} = \underline{8} \times \underline{5}$
$= \underline{40}$