

**CHAPTER**



# Negative Numbers and the Number Line

## Lesson 2.1 Negative Numbers

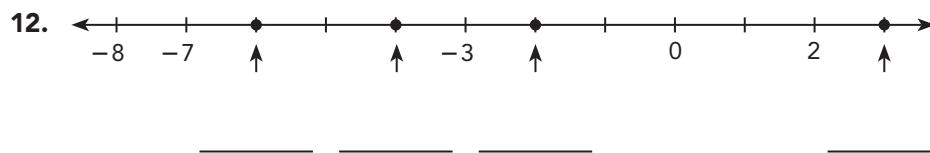
**Write a positive or negative number to represent each situation.**

1. A loss of \$180 \_\_\_\_\_
2. 3 floors below the ground level \_\_\_\_\_
3. 200 feet below sea level \_\_\_\_\_
4. A withdrawal of \$2,500 from a bank account \_\_\_\_\_
5. A deposit of \$5,200 into a bank account \_\_\_\_\_
6. A drop in temperature of 4°F \_\_\_\_\_
7. 16°C below zero \_\_\_\_\_
8. If 8 miles denotes 8 miles due north, what denotes 5 miles due south? \_\_\_\_\_

**Write the opposite of each number.**

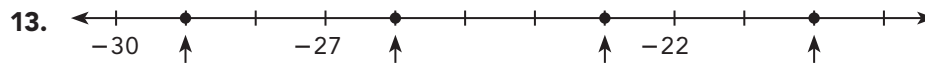
9. 6 \_\_\_\_\_      10. -75 \_\_\_\_\_      11. -100 \_\_\_\_\_

**Complete each number line by filling in the missing numbers.**

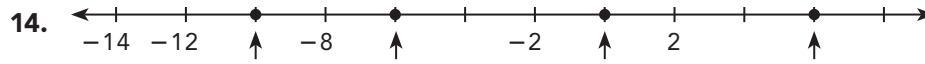


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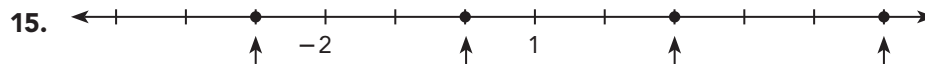
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**Draw a horizontal number line to represent each set of numbers.**

16.  $-4, 0, 3, -1, 5, -5$

17.  $-8, -2, -5, 0, -7, 3$

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

18. Numbers from 1 to  $-12$

19. Odd numbers between  $-10$  and 3

Name: \_\_\_\_\_

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**Draw a number line from  $-7$  to  $4$ . Then use the number line to compare each pair of numbers using  $>$  and  $<$ .**

20.  $-7$    $-5$

21.  $-1$    $-2$

22.  $-4$    $0$

23.  $3$    $-6$

24.  $-3$    $-1$

25.  $-6$    $1$

**Complete each inequality using  $>$  or  $<$ .**

26.  $-1.8$    $0$

27.  $4$    $-5$

28.  $6$    $-10$

29.  $-7$    $-9$

30.  $-9$    $-3$

31.  $-12$    $1$

**Order the numbers in each set from least to greatest.**

32.  $-25, 0, 48, -110, 23,$  and  $-200$

33.  $8, 201, -210, -509, 52,$  and  $-20$

\_\_\_\_\_

\_\_\_\_\_

**Order the numbers in each set from greatest to least.**

34.  $-120, -45, 10, 90, -80,$  and  $55$

35.  $42, -327, 25, -24, 108,$  and  $-61$

\_\_\_\_\_

\_\_\_\_\_

**Answer the question.**

36. Jose and Ling are given 50 points at the beginning of a board game. During the game, Jose lost 120 points and Ling lost 80 points. Who has fewer points? Write an inequality statement to compare their results at the end of the game.

### Lesson 1.4

- 64
- 81
- 169
- 400
- 729
- 961
- 14
- 16
- 30
- 18
- 24
- 22
- 144, 196, 256, 324, 400, and 484
- $2 \times 2 \times 5 \times 7 \times 7 \times 5$   
 $= (2 \times 5 \times 7) \times (2 \times 5 \times 7)$   
 $= (2 \times 5 \times 7)^2$   
 $= 70^2$   
 $\sqrt{2 \times 2 \times 5 \times 7 \times 7 \times 5} = 70$
- $\sqrt{144} = 12$   
 $12 \times 4 = 48$  inches
- 529
- 1,600
- 21
- 25
- $121 + 9 = 130$
- $36 \times 10 = 360$
- 28,900
- 841
- 310
- 75
- a)  $126 = 2 \times 3 \times 3 \times 7$   
 $90 = 2 \times 3 \times 3 \times 5$   
Longest length  $\rightarrow 2 \times 3 \times 3$   
 $= 18$  centimeters
- b)  $126 \div 18 = 7$   
 $90 \div 18 = 5$   
 $7 \times 5 = 35$  squares

### Lesson 1.5

- 8,000
- 1,728
- 4,913
- 5,832
- 8
- 13
- 16
- 21
- 1,331 and 2,197
- $3,375 = (3 \times 5) \times (3 \times 5) \times (3 \times 5)$   
 $= (3 \times 5)^3 = 15^3$   
 $\sqrt[3]{3,375} = 15$
- $729 - 25 = 704$
- $16 + 512 \div 8 = 80$
- $343 \times 9 - 125 = 2,962$
- $1,000 + 216 - 125 = 1,091$
- 11
- 14
- 19
- $9 + 729 = 738$
- $8 \times 7 \times 9 \times 49 \times 3$   
 $= 2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 7 \times 7 \times 7$   
 $= (2 \times 3 \times 7) \times (2 \times 3 \times 7) \times (2 \times 3 \times 7)$   
 $= (2 \times 3 \times 7)^3 = 42^3$   
 $\sqrt[3]{8 \times 7 \times 9 \times 49 \times 3} = 42$

- $\sqrt[3]{729} = 9$   
 $9 \times 9 = 81$  square inches
- Length of the cube  $\rightarrow \sqrt[3]{2744} = 14$  inches  
Length of the wire  $\rightarrow$   
 $12 \text{ edges} \times 14 \text{ inches} = 168 \text{ inches}$

### Brain @ Work

- Answers vary. Possible answers:
  - $4 \div 4 + 4 \div 4 = 2$
  - $(4 + 4 + 4) \div 4 = 3$
  - $4 + 4 \times (4 - 4) = 4$
  - $(4 \times 4 + 4) \div 4 = 5$
  - $(4 + 4) \div 4 + 4 = 6$
  - $4 + 4 - 4 \div 4 = 7$
  - $4 + 4 + 4 - 4 = 8$
  - $4 + 4 + 4 \div 4 = 9$
- LCM of 6, 7, and 9:  
 $2 \times 3 \times 3 \times 7 = 126$   
 $126 - 1 = 125$   
 $125 \div 6 = 20 \text{ R}5$   
 $125 \div 7 = 17 \text{ R}6$   
 $125 \div 9 = 13 \text{ R}8$   
The number is 125.

## Chapter 2

### Lesson 2.1

- \$180
- 3
- 200 feet
- \$2,500
- \$5,200
- 4°F
- 16°C
- 5 miles
- 6
- 75
- 100
- 6, -4, -2, 3
- 29, -26, -23, -20
- 10, -6, 0, 6
- 3, 0, 3, 6

