Practice 1-2

Simplify each expression.

1. $3 + (15 - 5) \cdot 2$
2. $5 \cdot 6 + 2 \cdot 4$
3. $48 \div 8 - 1$
4. $68 - 12 \div 3$
5. $6(2 + 7)$
6. $25 - (6 \cdot 4)$
7. $[9 - (6 - 3)] - 10$
8. $60 + (3 + 12)$
9. $4 - 2 + 6 \cdot 2$
10. $18 + (5 - 2)$
11. $\frac{16 + 24}{36}$
12. $2[4(9 - 7) + 1]$
13. $(8 + 8 + 2 + 11) \div 2$
14. $9 + 3 \cdot 4$
15. $18 + 3 \cdot 5 - 4$
16. $10 + 28 + 14 - 5$

Insert grouping symbols to make each number sentence true.

17. $3 + 5 \cdot 8 = 64$
18. $4 \cdot 6 - 2 + 7 = 23$
19. $10 \div 3 + 2 - 4 = 8$
20. $3 + 6 \cdot 2 = 18$

A city park has two walkways with a grassy area in the center, as shown in the diagram.

21. Write an expression for the area of the sidewalks, using subtraction.

22. Write an expression for the area of the sidewalks, using addition.

Compare. Use $>, <,$ or $=$ to complete each statement.

23. $(24 - 8) \cdot 4$ $24 - 8 + 4$
24. $3 \cdot (4 - 2) \cdot 5$ $3 \cdot 4 - 2 \cdot 5$
25. $(22 + 8) \div 2$ $22 + 8 \div 2$
26. $20 + 2 + 8 \div 2$ $20 + (2 + 8) \div 2$
27. $11 \cdot 4 - 2$ $11 \cdot (4 - 2)$
28. $(7 - 3) - (4 - 2)$ $7 - 3 + 4 - 2$


Practice 1-3

Evaluate each expression.

1. $xy$, for $x = 3$ and $y = 5$
2. $24 - p \cdot 5$, for $p = 4$
3. $5a + b$, for $a = 4$ and $b = 3$
4. $6x$, for $x = 3$
5. $9 - k$, for $k = 2$
6. $63 + p$, for $p = 7$
7. $2 + n$, for $n = 3$
8. $3m$, for $m = 11$
9. $10 - r + 5$, for $r = 9$
10. $m + n \div 6$, for $m = 12$ and $n = 18$
11. $1,221 - x$, for $x = 37$
12. $10 - x$, for $x = 3$
13. $4m + 3$, for $m = 5$
14. $35 - 3x$, for $x = 10$
15. $851 - p$, for $p = 215$
16. $18a - 9b$, for $a = 12$ and $b = 15$
17. $3ab - c$, for $a = 4$, $b = 2$, and $c = 5$
18. $\frac{a}{b} + 4c$, for $a = 6$, $b = 5$, and $c = 3$
19. $\frac{a}{b}$, for $a = 9$, $b = 2$, and $t = 4$
20. $x(y + z)$, for $x = 3$, $y = -2$, and $z = 7$
21. Elliot is 58 years old.
a. Write an expression for the number of years by which Elliot's age exceeds that of his daughter, who is $y$ years old.
   b. If his daughter is 25, how much older is Elliot?
22. A tree grows 5 in. each year.
a. Write an expression for the tree's height after $x$ years.
b. When the tree is 36 years old, how tall will it be?
Practice 1-4
Integers and Absolute Value

Graph each set of numbers on a number line. Then order the numbers from least to greatest.

1. \(-4, -8, 5\)
2. \(3, -3, -2\)

3. \(0, -9, -5\)
4. \(-7, -1, -6\)

Write an integer to represent each quantity.

5. 5 degrees below zero
6. 2,000 ft above sea level
7. a loss of 12 yd
8. 7 strokes under par

Simplify each expression.

9. the opposite of \(-15\)
10. \(-9\)
11. \(-|-25|\)
12. the opposite of \(-8\)
13. \(-|31|\)
14. \([847]\)

Write the integer represented by each point on the number line.

15. \(A\)
16. \(B\)
17. \(C\)
18. \(D\)
19. \(E\)

Compare. Write \(>, <, \text{ or } =\) to complete each statement.

20. \(-3\) \(\square\) 4
21. 5 \(\square\) 1
22. -2 \(\square\) -6
23. 7 \(\square\) 81
24. \(-12\) \(\square\) 25
25. -11 \(\square\) -6
26. \[4\] \(\square\) \(-5\)
27. 0 \(\square\) \(-7\)

Practice 1-5
Adding Integers

Write a numerical expression for each of the following. Then find the sum.

1. climb up 26 steps, then climb down 9 steps
2. earn $100, spend $62, earn $35, spend $72

Find each sum.

3. \(-8 + (-3)\)
4. \(6 + (-6)\)
5. \(-12 + (-17)\)
6. \(9 + (-11)\)
7. \(-4 + (-6)\)
8. \(18 + (-17)\)
9. \(-8 + 8 + (-11)\)
10. \(12 + (-7) + 3 + (-8)\)
11. \(-15 + 7 + 15\)
12. \(0 + (-11)\)
13. \(6 + (-5) + (-4)\)
14. \(-5 + (-16) + 5 + 8 + 16\)

Without adding, tell whether each sum is positive, negative, or zero.

15. \(192 + (-129)\)
16. \(-417 + (-296)\)
17. \(-175 + 87\)

Evaluate each expression for \(n = -12\).

18. \(n + 8\)
19. \(n + (-5)\)
20. \(12 + n\)

Compare. Write \(>, <, \text{ or } =\) to complete each statement.

21. \(-7 + 5\) \(\square\) \[3 + (-6)\]
22. \(4 + (-9)\) \(\square\) \[6 + (-7) + (-4)\]
23. An elevator went up 15 floors, down 9 floors, up 11 floors, and down 19 floors. Find the net change.
24. The price of a share of stock started the day at $37. During the day it went down $3, up $1, down $7, and up $4. What was the price of a share at the end of the day?

Lesson 1-4 Practice
Pre-Algebra Chapter 1

Lesson 1-5 Practice
Pre-Algebra Chapter 1
Practice 1-6

Subtracting Integers

Use rules to find each difference.
1. 8 - 12  
2. 13 - 6  
3. 9 - (-12)
4. 57 - 39  
5. -173 - 162  
6. 71 - (123)
7. 51 - 89  
8. -222 - (-117)  
9. 843 - 677
10. -98 - 183  
11. 366 - (-429)  
12. -83 - (-48) = 65

Find each difference.
13. 6 - 9  
14. 14 - 8  
15. -15 - 3
16. -25 - 25  
17. -16 - (-16)  
18. 32 - (-17) - 32

Round each number. Then estimate each sum or difference.
19. -57 + (-98)  
20. 448 - 52  
21. -191 + (-511)
22. -361 - (-58)  
23. 888 + 1,177  
24. -484 - 1,695

Write a numerical expression for each phrase. Then simplify.
25. A balloon goes up 2,300 ft; then goes down 600 ft.
26. You lose $50, then spend $35.
27. The Glases had $317 in their checking account. They wrote checks for $74, $132, and $48. What is their checking account balance?
Practice 1-8

Solve by looking for a pattern.

1. Each row in a window display of floppy disk cartons contains two more boxes than the row above. The first row has one box.
   a. Complete the table.
   
<table>
<thead>
<tr>
<th>Row Number</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boxes in the Row</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Boxes in the Display</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   b. Describe the pattern in the numbers you wrote.

   c. Find the number of rows in a display containing the given number of boxes.
      81 ___________ 144 ___________ 400 ___________

   d. Describe how you can use the number of boxes in the display to calculate the number of rows.

2. A computer multiplied 100 nines. You can use patterns to find the ones digit of the product.
   a. Find the ones digit for the product of:
      1 nine ______ 2 nines ______ 3 nines ______ 4 nines ______

   b. Describe the pattern.

   c. What is the ones digit of the computer's product?

3. Use the method of Exercise 2 to find the ones digit of the product when 4 is multiplied by itself 100 times.

Practice 1-9

Multiplying and Dividing Integers

Use repeated addition, patterns, or rules to find each product or quotient.

1. 23 \cdot 16

2. 8 \cdot 7(-6)

3. -17 \cdot 3

4. -24 \div 4

5. -65 \div 5

6. 117 \div (-1)

7. -30 \div (-6)

8. -21 \div (-3)

9. 63 \div (-21)

10. 5(-1)(-9)

11. -6(-3) \cdot 2

12. -3 \cdot 7(-2)

13. \frac{1512}{48}

14. \frac{-875}{65}

15. \frac{-15(-3)}{-9}

Compare. Use >, <, or = to complete each statement.

16. -7(5) \underline{\quad} -6 \cdot (-6)

17. -20 \cdot (-5) \underline{\quad} 10 \cdot 1-10|

18. 3(-6) \underline{\quad} -3(6)

19. 121 \div (-11) \underline{\quad} -45 \div (-6)

20. -40 \div 8 \underline{\quad} 40 \div (-8)

21. -54 \div 9 \underline{\quad} 21 \div (-3)

For each group, find the average.

22. temperatures: 6\degree, -15\degree, -24\degree, 3\degree, -25\degree

23. bank balances: $52, -$7, $20, -$63, -$82

24. stock price changes: $6, -$6, -$9, $1, $3

25. golf scores: -2, 0, 3, -2, -3, 1, -4

26. elevations (ft): -120, 168, -60, -42, -56

Write a multiplication or division sentence to answer the question.

27. The temperature dropped 4\degree each hour for 3 hours. What was the total change in temperature?