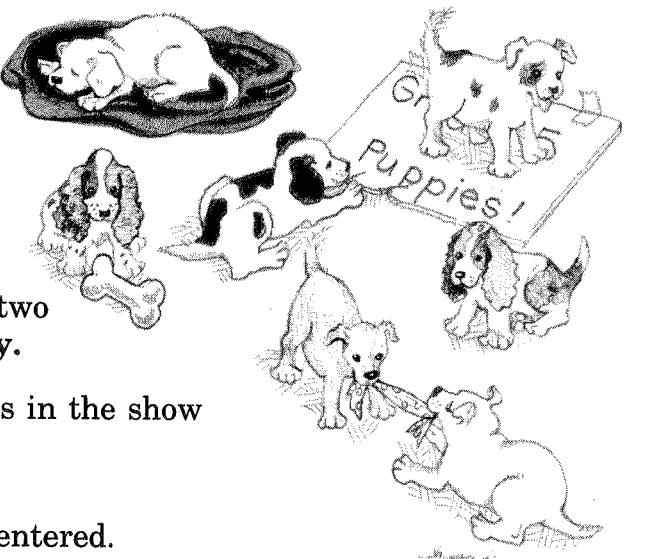
1 NUMBERS AND PLACE VALUE

Addition and Subtraction Facts



The fifth grade class has entered 13 animals in the school pet show. Write two addition and two subtraction equations using the numbers of puppies, kittens and pets.

We are looking for the two addition and two subtraction facts that make a **fact family.**

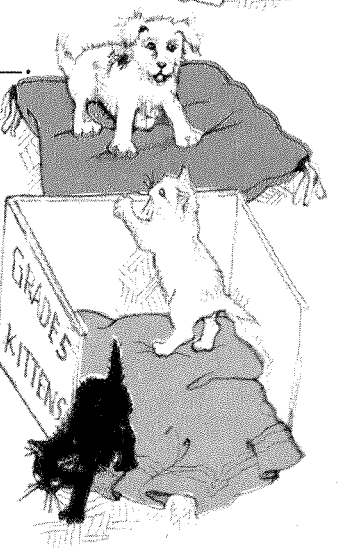
We know the **sum** or total number of pets in the show is ____.

There are ____ puppies and ____ kittens entered.

To write the addition facts, we add the addends, ____ and ____.

$8 + 5 = \_\_\_\_$ (puppies, kittens, pets)

$5 + 8 = \_\_\_\_$ (addends, sum)

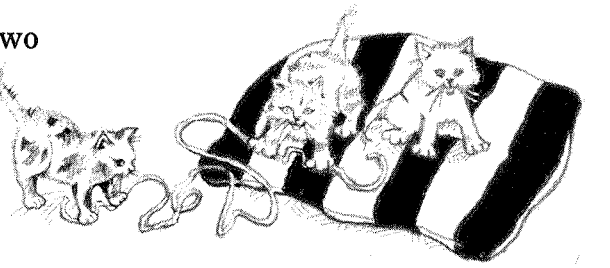


To write the subtraction facts, we subtract ____ and ____ from the total number of pets.

$13 - 5 = \_\_\_\_$ (pets, kittens, puppies)

$13 - 8 = \_\_\_\_$ (subtrahend, minuend, difference)

The fact family for 5, 8 and 13 is made of two _____ facts and two _____ facts.



$$\begin{array}{rr} 8 & 5 \\ +\,5 & +\,8 \end{array} \qquad \begin{array}{rr} 13 & 13 \\ -\,8 & -\,5 \end{array}$$

Getting Started

Write the fact family for each set of numbers.

1. 2, 4, 6 _____ _____

2. 7, 15, 8 _____ _____

Add or subtract.

3. $16 - 9 = \_\_\_\_$

4. $\begin{array}{r} 7 \\ +\,3 \end{array}$

Practice

Write the fact family for each set of numbers.

1. 3, 4, 7

_____

_____

_____

_____

2. 2, 9, 7

_____

_____

_____

_____

3. 6, 7, 13

_____

_____

_____

_____

4. 8, 0, 8

_____

_____

_____

_____

5. 12, 5, 7

_____

_____

_____

_____

6. 9, 17, 8

_____

_____

_____

_____

7. 7, 1, 8

_____

_____

_____

_____

8. 11, 6, 5

_____

_____

_____

_____

Add or subtract.

9. $7 + 2 =$ ____

10. $3 + 1 =$ ____

11. $11 - 5 =$ ____

12. $14 - 7 =$ ____

13. $7 + 6 =$ ____

14. $8 - 5 =$ ____

15. $8 + 0 =$ ____

16. $10 - 8 =$ ____

17. $15 - 8 =$ ____

18. $9 + 6 =$ ____

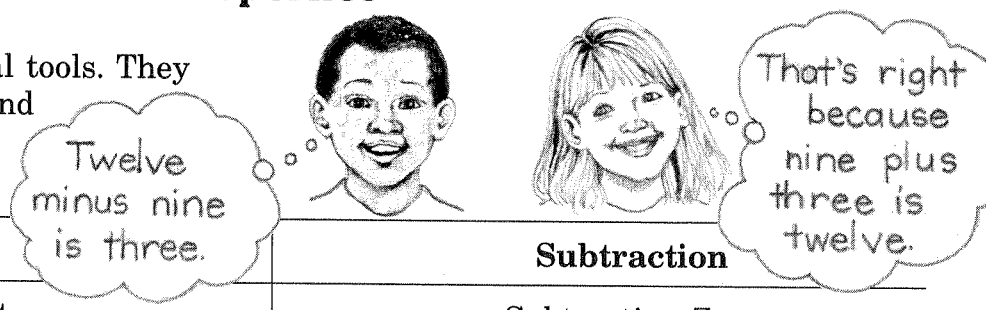
19. $5 + 9 =$ ____

20. $16 - 8 =$ ____

21. 11 − 8	22. 8 + 7	23. 10 − 4	24. 9 − 0	25. 10 − 7	26. 1 + 5
27. 6 + 6	28. 9 − 3	29. 7 + 0	30. 15 − 6	31. 8 + 9	32. 8 + 4
33. 6 + 9	34. 6 − 1	35. 12 − 6	36. 7 + 5	37. 9 + 9	38. 2 + 6
39. 4 + 9	40. 9 − 1	41. 7 + 3	42. 8 − 8	43. 11 − 4	44. 6 + 5
45. 1 + 0	46. 14 − 5	47. 5 + 7	48. 3 − 2	49. 10 − 1	50. 7 + 8

Addition and Subtraction Properties

Properties are like special tools. They make the job of adding and subtracting much easier.



Addition

Order Property

We can add in any order.

5 + 2 = 7 **2 + 5 = 7**

3 + 6 + 7 = ____ **7 + 3 + 6 = ____**

Grouping Property

We can change the grouping.

✔ Remember to add the numbers in parentheses first.

(6 + 3) + 5 = 14 **6 + (3 + 5) = 14**

(8 + 2) + 4 = ____ **8 + (2 + 4) = ____**

Zero Property

Adding zero makes the sum the same as the other addend.

5 + 0 = 5 **0 + 7 = 7**

0 + 1 = ____ **8 + 0 = ____**

Subtraction

Subtracting Zero

Subtracting zero makes the difference the same as the minuend.

9 − 0 = 9 **7 − 0 = ____**

Subtracting a Number from Itself

Subtracting a number from itself leaves zero.

8 − 8 = 0 **3 − 3 = ____**

Checking Subtraction

Subtracting is the reverse of adding.

15 − 9 = 6 because **6 + 9 = 15**

12 − 7 = ____ because

____ + ____ = ____

✔ **Solving for *n*** is finding the value for the ***n*** in the equation.

Getting Started

Solve for *n*.

1. $0 + 0 = n$

$n =$ ____

2. $0 + 6 = n$

$n =$ ____

Subtract. Check by adding.

3. $\begin{array}{r} 15 \\ -\ 9 \\ \hline \end{array}$

4. $\begin{array}{r} 12 \\ -\ 7 \\ \hline \end{array}$

5. $\begin{array}{r} 18 \\ -\ 9 \\ \hline \end{array}$

Add. Check by grouping the addends another way.

6. $\begin{array}{r} 5 \\ 3 \\ +\ 4 \\ \hline \end{array}$

7. $\begin{array}{r} 2 \\ 6 \\ +\ 3 \\ \hline \end{array}$

8. $\begin{array}{r} 6 \\ 3 \\ +\ 4 \\ \hline \end{array}$

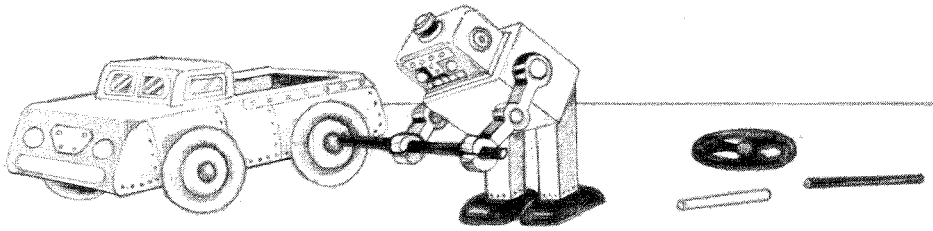
9. $(5 + 2) + 6 = n$

$n =$ ____

10. $3 + (5 + 4) = n$

$n =$ ____

Practice



Solve for n.

1. $5 + 0 = n$

   $n =$ ____

2. $6 - 0 = n$

   $n =$ ____

3. $0 - 0 = n$

   $n =$ ____

4. $9 - 9 = n$

   $n =$ ____

5. $5 + 8 = n$

   $n =$ ____

6. $8 + 5 = n$

   $n =$ ____

7. $9 + 7 = n$

   $n =$ ____

8. $9 + n = 16$

   $n =$ ____

Subtract. Check by adding.

9. 11 − 6	10. 15 − 7	11. 14 − 5	12. 16 − 8	13. 14 − 7	14. 6 − 6
15. 17 − 8	16. 12 − 5	17. 13 − 6	18. 15 − 6	19. 11 − 8	20. 14 − 9

Add. Check by grouping the addends another way.

21. 4 3 + 2	22. 7 2 + 6	23. 8 1 + 4	24. 4 3 + 5	25. 5 2 + 6	26. 7 1 + 7

27. $(8 + 0) + 6 = n$

    $n =$ ____

28. $2 + (4 + 5) = n$

    $n =$ ____

29. $(4 + 4) + 5 = n$

    $n =$ ____

30. $6 + (2 + 3) = n$

    $n =$ ____

31. $(1 + 6) + 3 = n$

    $n =$ ____

32. $7 + (3 + 5) = n$

    $n =$ ____

EXCURSION

Arrange the numbers 1 through 10 into 5 pairs of numbers so that the paired numbers have the sums of 6, 7, 9, 16 and 17.

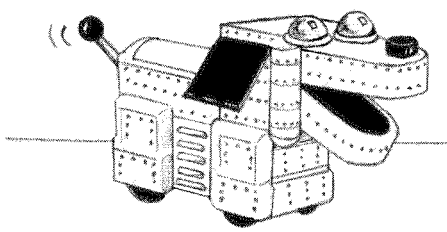
____ + ____ = 6 ____ + ____ = 7 ____ + ____ = 9

____ + ____ = 16 ____ + ____ = 17

Practicing Addition Facts

Add.

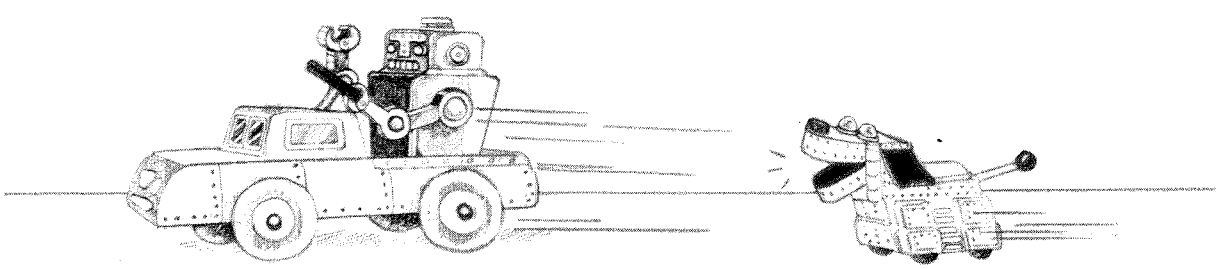
2 + 1	7 + 2	7 + 4	1 + 3	1 + 8	2 + 3	3 + 2	7 + 9	1 + 4	4 + 4
3 + 0	5 + 5	8 + 6	6 + 0	0 + 6	2 + 9	3 + 1	6 + 3	6 + 5	6 + 8
9 + 1	7 + 0	5 + 2	2 + 2	1 + 2	2 + 6	9 + 4	5 + 3	7 + 3	7 + 6
0 + 9	9 + 9	3 + 3	1 + 6	9 + 0	0 + 2	7 + 7	0 + 3	4 + 7	0 + 5
7 + 8	5 + 6	1 + 1	2 + 4	5 + 9	2 + 5	5 + 4	1 + 0	7 + 1	3 + 5
8 + 8	9 + 2	5 + 7	1 + 7	5 + 8	0 + 4	6 + 9	6 + 7	4 + 9	7 + 5
9 + 6	5 + 1	4 + 3	6 + 1	8 + 1	2 + 0	8 + 2	3 + 8	6 + 2	3 + 7
6 + 4	4 + 0	9 + 5	0 + 7	3 + 4	4 + 1	8 + 9	4 + 8	0 + 1	9 + 3
8 + 7	1 + 5	6 + 6	3 + 9	8 + 4	4 + 2	3 + 6	8 + 3	5 + 0	2 + 8
1 + 9	0 + 8	8 + 0	0 + 0	2 + 7	4 + 5	9 + 7	9 + 8	4 + 6	8 + 5



Practicing Subtraction Facts

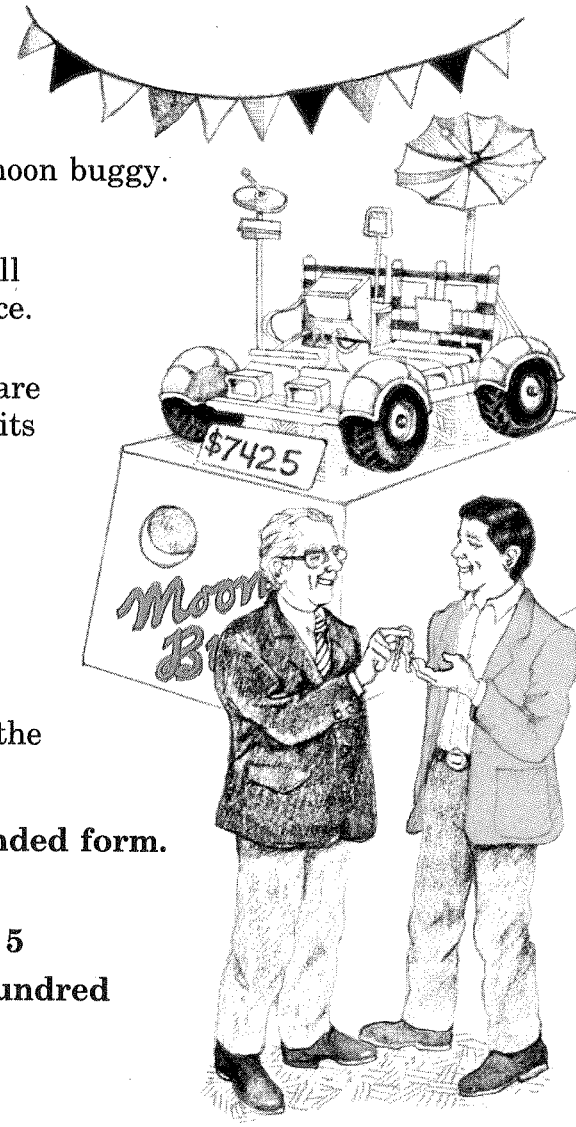
Subtract.

3 − 1	1 − 0	12 − 4	9 − 4	10 − 7	7 − 7	8 − 1	14 − 5	6 − 0	9 − 8
15 − 9	8 − 7	10 − 8	18 − 9	8 − 0	13 − 4	7 − 0	3 − 2	12 − 5	14 − 8
8 − 4	11 − 3	8 − 6	4 − 0	9 − 0	10 − 4	11 − 4	5 − 3	1 − 1	8 − 3
8 − 2	6 − 3	6 − 2	4 − 1	7 − 3	3 − 3	11 − 8	2 − 1	10 − 1	10 − 2
9 − 2	7 − 1	5 − 5	5 − 0	15 − 8	4 − 3	13 − 5	10 − 3	5 − 1	4 − 4
6 − 5	13 − 9	9 − 6	12 − 8	11 − 2	9 − 1	2 − 2	10 − 6	7 − 6	13 − 6
16 − 9	15 − 7	7 − 5	14 − 9	17 − 8	12 − 6	8 − 5	12 − 7	5 − 4	10 − 9
6 − 4	9 − 9	12 − 9	16 − 8	9 − 5	6 − 1	8 − 8	16 − 7	9 − 7	5 − 2
11 − 9	11 − 7	4 − 2	11 − 6	11 − 5	15 − 6	7 − 4	2 − 0	14 − 6	17 − 9
6 − 6	13 − 8	10 − 5	3 − 0	14 − 7	9 − 3	0 − 0	7 − 2	13 − 7	12 − 3



Place Value through Thousands

The government space agency plans to sell used moon buggies to the highest bidders. What did Charley pay for the one he bought?



We want to understand the cost of Charley's moon buggy.

Charley paid exactly _____.
To understand how much money this is, we will look at the place value of each digit in the price.

✔ The numbers 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9 are called **digits.** The position of the digit decides its place value.

thousands	hundreds	tens	ones
____	____	____	____

In 7,425, the digit 4 represents hundreds, and the digit 7 represents _____.
Numbers can be written in **standard** or **expanded form.**

Standard Form	Expanded Form
7,425	**7,000 + 400 + 20 + 5**

We say Charley paid **seven thousand, four hundred twenty-five dollars.** We write _____.

Getting Started

Write in standard form.

1. five thousand, six hundred fifty-eight _____

2. 3,000 + 50 + 8 _____

Write in words.

3. 6,497 _____ _____

4. 823 _____ _____

5. 9,045 _____ _____

Write the place value of the red digits.

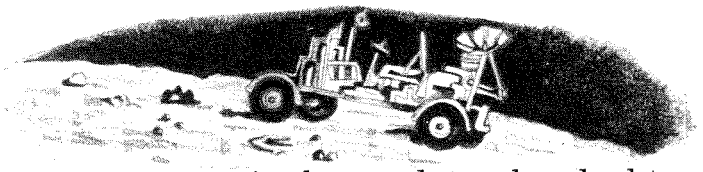
6. 3,948 _____

7. 9,603 _____

8. 7,529 _____

9. $5,370 _____

Practice



Write in standard form.

1. eight hundred fifty-three

_____

2. six thousand, two hundred twenty-five

_____

3. four thousand, nine hundred

_____

4. three thousand, six hundred six

_____

5. seven thousand, twenty

_____

6. nine thousand, four hundred seventeen

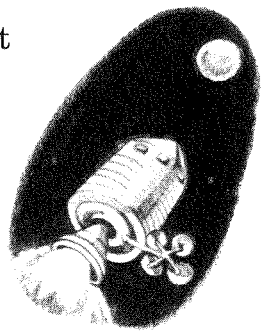
_____

7. six hundred sixty-six

_____

8. three thousand, thirty-eight

_____



9. 7,000 + 300 + 30 + 9 = _____

10. 4,000 + 60 + 2 = _____

11. 500 + 6 = _____

12. 2,000 + 700 + 8 = _____

Write in words.

13. 6,257 _____

14. 3,209 _____

15. 765 _____

16. 8,050 _____

17. 89 _____

18. 4,961 _____

19. 2,006 _____

20. 8,863 _____

21. 7,210 _____

22. 9,176 _____

23. 1,311 _____

24. 5,320 _____

Write the place value of the red digits.

25. 9,650 _____

26. 8,639 _____

27. 136 _____

28. $4,257 _____

29. 97 _____

30. 7,348 _____

31. 5,090 _____

32. 3,748 _____

33. 7,516 _____

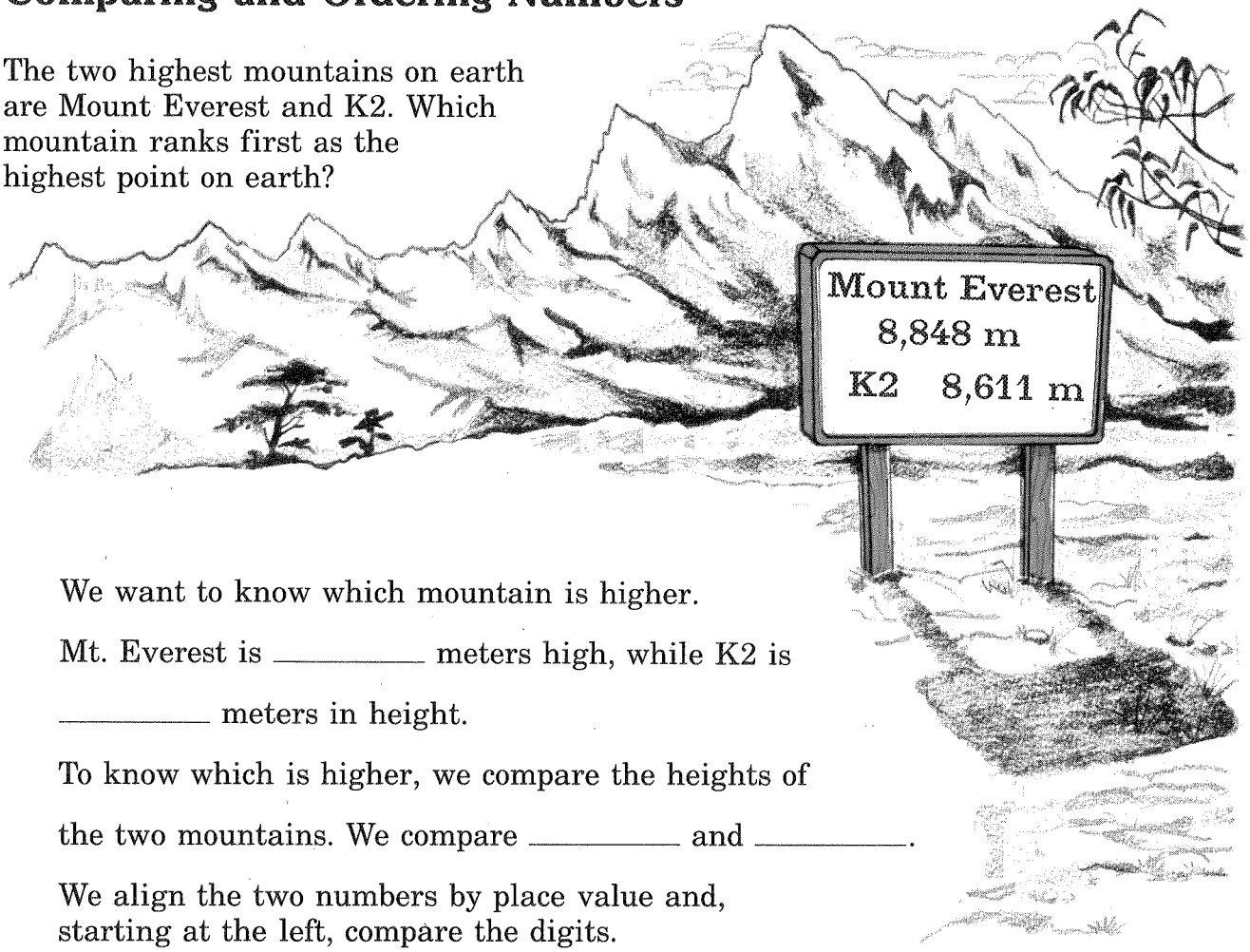
34. $3,259 _____

35. 831 _____

36. 6,547 _____

Comparing and Ordering Numbers

The two highest mountains on earth are Mount Everest and K2. Which mountain ranks first as the highest point on earth?



We want to know which mountain is higher.

Mt. Everest is _____ meters high, while K2 is _____ meters in height.

To know which is higher, we compare the heights of the two mountains. We compare _____ and _____.

We align the two numbers by place value and, starting at the left, compare the digits.

8,848	8,848
8,611	8,611
8 = 8	8 > 6

We say 8,848 **is greater than** 8,611 or 8,611 **is less than** 8,848.

We write **8,848 > 8,611** or **8,611 < 8,848.**

_____ is the highest mountain on earth.

Getting Started

Write < or > in the circle.

1. 73 ◯ 76
2. 246 ◯ 426
3. 3,287 ◯ 3,247
4. 5,275 ◯ 6,796
5. 4,572 ◯ 4,562
6. 9,205 ◯ 9,215

Write the numbers in order from least to greatest.

7. 5,246 4,375 6,295 _____
8. 6,203 6,245 6,196 _____
9. 3,058 3,028 3,167 _____

Practice

Write < or > in the circle.

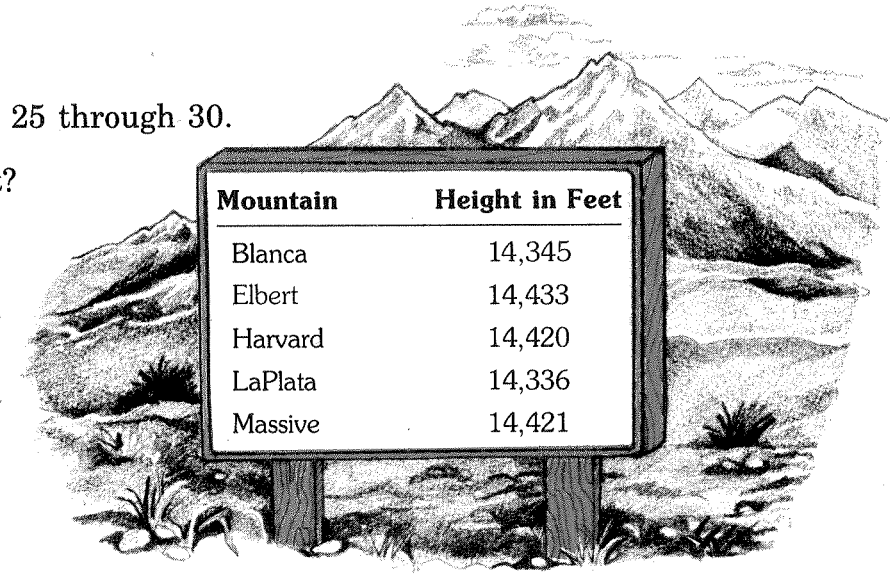
1. 67 ◯ 63
2. 92 ◯ 95
3. 126 ◯ 123
4. 562 ◯ 652
5. 309 ◯ 299
6. 417 ◯ 471
7. 3,644 ◯ 4,564
8. 5,947 ◯ 5,949
9. 3,699 ◯ 3,000
10. 7,243 ◯ 7,234
11. 1,006 ◯ 1,008
12. 9,450 ◯ 9,350
13. 6,225 ◯ 6,224
14. 8,500 ◯ 8,600
15. 4,060 ◯ 4,059

Write the numbers from least to greatest.

16. 349 285 351 _____
17. 603 596 728 _____
18. 400 399 401 _____
19. 2,659 2,650 2,670 _____
20. 7,810 7,920 7,890 _____
21. 5,236 4,868 4,976 _____
22. 3,965 3,695 3,569 _____
23. 8,196 8,194 8,190 _____
24. 4,210 4,021 4,110 _____

Apply

Use the chart to answer questions 25 through 30.



Mountain	Height in Feet
Blanca	14,345
Elbert	14,433
Harvard	14,420
LaPlata	14,336
Massive	14,421

25. Which mountain is the highest? _____
26. Which mountain is the lowest? _____
27. Which mountain is the fourth highest? _____
28. How many mountains are higher than Harvard? ____
29. How many mountains are less than 14,350 feet? ____
30. List the mountains from highest to lowest.

_____

_____