

Name _____

Subtract with Zeros

Let's Build

Lesson 2-8

I can ... use the standard algorithm to subtract from numbers with zeros.

Explore and Share

The sign shows the distance from each city to the South Pole. How much farther is London than Tokyo from the South Pole? Show your work. Be ready to explain. **Solve this problem any way you choose.**



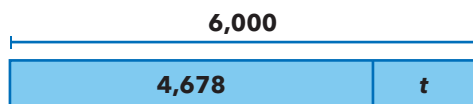
Use **reasoning** to decide what operation you will use to compare two distances.





Visual Learning

- A** A music hall is hosting a concert. The hall sells 4,678 tickets to the show. How many tickets are still available?



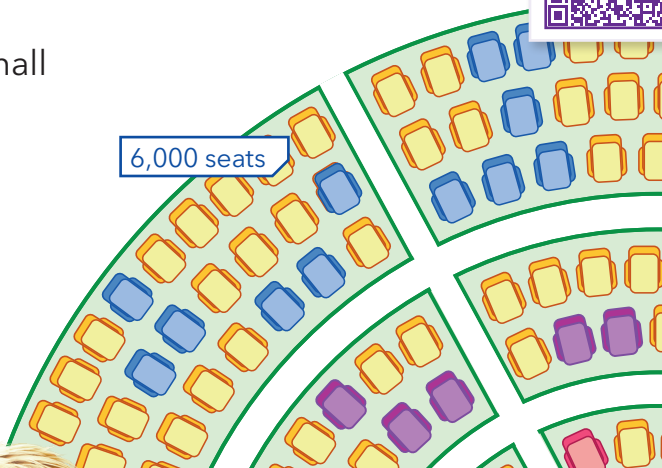
$$t = 6,000 - 4,678$$

$$\text{Estimate: } 6,000 - 4,700 = 1,300$$

When subtracting from a number with zeros, you may need to regroup several places before subtracting.



Let t equal the number of available tickets.

**B Regroup.**

$$\begin{array}{r} 6,000 \\ - 4,678 \\ \hline \end{array}$$
 Because of the zeros, you need to start regrouping from the thousands.

$$\begin{array}{r} 5 \quad 10 \\ \cancel{6},000 \\ - 4,678 \\ \hline \end{array}$$
 6 thousands = 5 thousands + 10 hundreds

$$\begin{array}{r} 5 \quad 9 \quad 10 \\ \cancel{6},000 \\ - 4,678 \\ \hline \end{array}$$
 10 hundreds = 9 hundreds + 10 tens

$$\begin{array}{r} 5 \quad 9 \quad 9 \quad 10 \\ \cancel{6},000 \\ - 4,678 \\ \hline \end{array}$$
 10 tens = 9 tens + 10 ones

C Subtract.

$$\begin{array}{r} 5 \quad 9 \quad 9 \quad 10 \\ \cancel{6},000 \\ - 4,678 \\ \hline 1,322 \end{array}$$

$10 - 8 = 2$ ones
 $90 - 70 = 2$ tens
 $900 - 600 = 3$ hundreds
 $5,000 - 4,000 = 1$ thousand

Because 1,322 is close to the estimate 1,300, the difference is reasonable.

There are still 1,322 tickets available for the concert.

Talk About Math Ideas

What number makes each of the statements on the right true? Explain.

1 thousand is ____ hundreds.

1 hundred is ____ tens.

1 ten is ____ ones.

Guided Practice**Do You Understand?**

- 1. Use Structure** Leesa used compensation to solve this problem:
 $(6,000 - 1) - (4,678 - 1) = 5,999 - 4,677 = 1,322$. How could you use Leesa's approach to subtract $4,999 - 1,475$?

- 2.** One passenger flew 11,033 kilometers from Oslo to Lima. Another passenger flew 8,593 kilometers from Oslo to Los Angeles. How many more kilometers was the flight to Lima?

Do You Know How?

For **3–8**, subtract.

$$\begin{array}{r} 3. \quad 6,000 \\ - 1,773 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 231,086 \\ - 172,863 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 76,810 \\ - 22,645 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 90,304 \\ - 51,137 \\ \hline \end{array}$$

7. $101,001 - 8,915$ **8.** $9,050 - 3,461$

Practice and Problem Solving

For **9–23**, subtract.

$$\begin{array}{r} 9. \quad 1,902 \\ - 1,374 \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad 6,502 \\ - 5,380 \\ \hline \end{array}$$

$$\begin{array}{r} 11. \quad 63,000 \\ - 48,673 \\ \hline \end{array}$$

$$\begin{array}{r} 12. \quad 84,010 \\ - 3,992 \\ \hline \end{array}$$

$$\begin{array}{r} 13. \quad 2,052 \\ - 1,039 \\ \hline \end{array}$$

$$\begin{array}{r} 14. \quad 31,030 \\ - 27,426 \\ \hline \end{array}$$

$$\begin{array}{r} 15. \quad 50,469 \\ - 22,917 \\ \hline \end{array}$$

$$\begin{array}{r} 16. \quad 1,830 \\ - 644 \\ \hline \end{array}$$

$$\begin{array}{r} 17. \quad 7,203 \\ - 847 \\ \hline \end{array}$$

$$\begin{array}{r} 18. \quad 726,003 \\ - 282,942 \\ \hline \end{array}$$

$$\begin{array}{r} 19. \quad 4,707 \\ - 2,016 \\ \hline \end{array}$$

$$\begin{array}{r} 20. \quad 30,900 \\ - 22,855 \\ \hline \end{array}$$

21. $6,090 - 5,130$

22. $11,246 - 9,489$

23. $790,008 - 643,829$

Estimate to check if your answer is reasonable.



Lesson Help

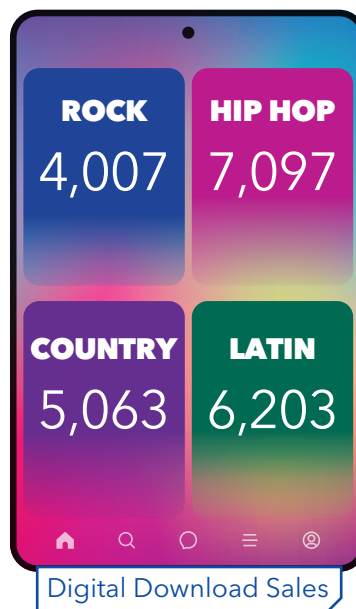


- 24. Construct Arguments** Will the difference between 44,041 and 43,876 be greater or less than 1,000? Explain.

- 25. Vocabulary** Define *variable* and give an example of how a variable is used in an equation.

- 26.** How many more hip-hop than country downloads were sold?

- 27. Higher Order Thinking** How many more hip-hop and Latin downloads were sold than rock and country downloads? Explain.



Assessment Practice

- 28.** Select all the correct differences.

- ☐ $5,000 - 1,856 = 3,244$
- ☐ $10,700 - 8,243 = 2,457$
- ☐ $64,002 - 43,178 = 20,934$
- ☐ $98,000 - 59,214 = 38,786$
- ☐ $600,482 - 428,531 = 171,951$

- 29.** Find the difference.

$$\begin{array}{r} 60,000 \\ - 38,243 \\ \hline \end{array}$$

Ⓐ 17,355
Ⓑ 20,757
Ⓒ 21,757
Ⓓ 98,243