

# Question Bank

Assign these questions as additional homework, or use them as review, quiz, or test questions.

For Exercises 1 and 2, use the following data about Lincoln Middle School.

**Lincoln Middle School**  
Enrollment: 623 students  
Ratio of girls to boys: 2 to 3

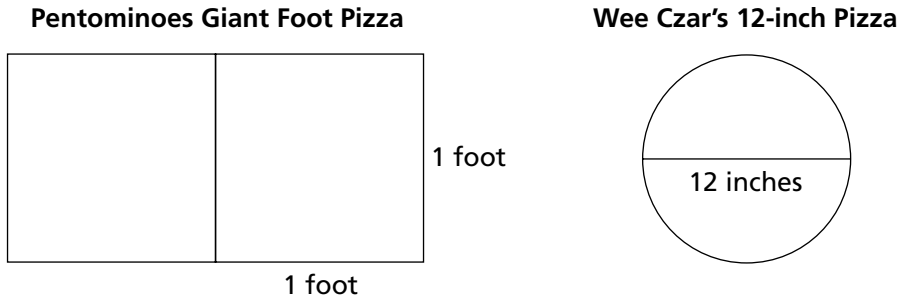
1. How many girls are enrolled in Lincoln Middle School?
2. Suppose there is one teacher on staff for every 25 students enrolled. Estimate the number of teachers at Lincoln Middle School.
3. *Donuts4U* has donuts on sale at 12 for \$5.40. Use division to find the unit rates that answer each question.
  - a. What is the cost per donut?
  - b. How many donuts can you buy for a dollar?
4. The school store sells pencils at 24 for \$3.00.
  - a. What are the two unit rates that you might compare?
  - b. Compute each unit rate and tell what it means.
5. Find a value of  $x$  that will make each proportion true.

a. $\frac{2}{3} = \frac{x}{24}$	b. $\frac{3}{4} = \frac{18}{x}$	c. $\frac{x}{5} = \frac{4}{20}$
d. $\frac{6}{10} = \frac{x}{15}$	e. $\frac{12}{16} = \frac{x}{20}$	f. $\frac{8}{12} = \frac{14}{x}$
6. Kaitlyn wants to estimate the number of candies in a 2-pound (32-ounce) bag of chocolate-covered peanuts. She examines several 2-ounce packages of the same candy and counts 8 or 9 candies in each.
  - a. How many pieces of candy can Kaitlyn expect to get in a 2-pound bag?
  - b. Kaitlyn wants to fill a 64-ounce candy bowl. The 2-ounce bags are sold 8 for \$1.00, and the 32-ounce bag costs \$2.79. Which is the better buy? Tell how much less it would cost to fill her bowl this way compared to filling it with packages of the other size.

# Question Bank *(continued)*

## Comparing and Scaling

7. Pentominoes Pizza introduces a new pizza called the Giant Foot to compete with Wee Czar's 2-pizzas-for-the-price-of-1 offer. The Giant Foot is two 1-square-foot pizzas put together. Pentominoes' ad claims that the Giant Foot is 25% larger than two Wee Czar's 12-inch round pizzas. A Giant Foot costs \$8.99. Two 12-inch round pizzas from Wee Czar's cost \$8.88.



- Which offer gives you more pizza for your money?
  - Is the Giant Foot 25% larger than two 12-inch round pizzas from Wee Czar's? If so, prove it. If not, use percents to show how they really compare.
8. Which offer is the better buy?

2-liter bottles of Orange Splash! 4 for \$4.99

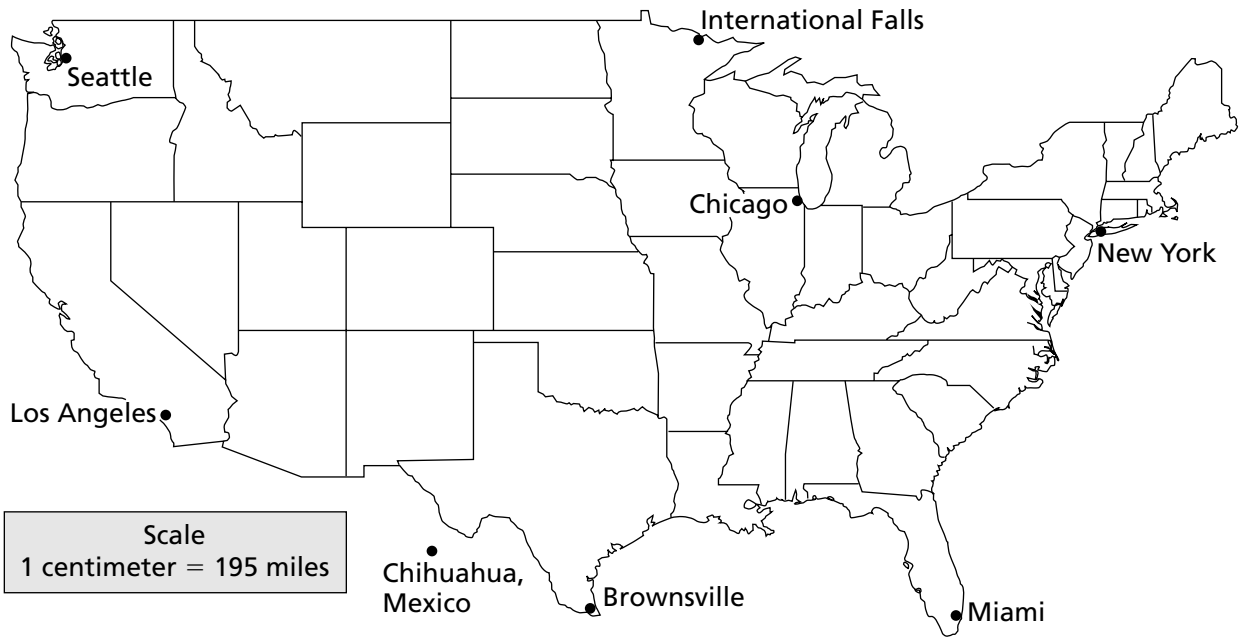
$\frac{1}{2}$ -liter bottles of Orange Splash!  
\$1.99 per 8-pack

9. On Earth, land covers 57,900,000 square miles and water covers 139,000,000 square miles.
- Write a statement comparing Earth's land surface to its water surface.
  - What portion of Earth's surface is water?
  - How does Earth's total surface area compare to your state's area?
10. Leticia is shopping for gifts. She compares prices at two stores so she can get the best deals. For each item, tell which store has the better price.

### Gift Prices

Gift	Darren's Warehouse	U-Rule Department Store
handkerchiefs	package of 10 for \$11.00	package of 3 for \$3.75
greeting cards	package of 8 for \$9.99	package of 3 for \$5.49
ballpoint pens	one dozen for \$9.60	2 for \$1.59
audiocassette tapes	one dozen for \$13.20	5-pack for \$5.95

For Exercises 11–13, use the map below.



11. What would be the approximate driving time to travel from Seattle to New York at an average speed of 55 miles per hour?
12. An airplane averages 500 miles per hour. Choose two cities on the map, and find out how long would it take this plane to fly between them.
13. How far is it from your city to Chihuahua, Mexico?

For Exercises 14–17, use the data below. The table shows the all-time top 10 American movies in terms of North American Box Office earnings.

**All-Time Top 10 American Movies**

Rank	Title (year released)	Earnings (millions)
1	<i>Titanic</i> (1997)	\$600.8
2	<i>Star Wars: Episode IV—A New Hope</i> (1977)	\$461.0
3	<i>Shrek 2</i> (2004)	\$436.7
4	<i>E.T. The Extra-Terrestrial</i> (1982)	\$435.0
5	<i>Star Wars: Episode I—The Phantom Menace</i> (1999)	\$431.1
6	<i>Spider-Man</i> (2002)	\$403.7
7	<i>The Lord of the Rings: The Return of the King</i> (2003)	\$377.0
8	<i>The Passion of the Christ</i> (2004)	\$370.3
9	<i>Spider-Man 2</i> (2004)	\$368.4
10	<i>Jurassic Park</i> (1993)	\$357.1
<b>Total earnings</b>		<b>\$4,248.1</b>

SOURCE: *Variety*, as found in *The World Almanac and Book of Facts 2005*.

14. How do the earnings of *Titanic* and *Jurassic Park* compare?
15. Write a fraction that compares the earnings between *Star Wars: Episode IV—A New Hope* to the total earnings from the top 10 movies.
16. Write a ratio that compares the earnings of *Titanic* to *Spider-Man*.
17. Write a decimal that compares the earnings of *E.T. The Extra-Terrestrial* to the total earnings from the top 10 movies.

**For Exercises 18–20, use the data in the chart, which shows the population of some counties in the United States.**

**Selected Counties With Populations Over 1 Million**

County	State	2000 Population	2003 Population
Los Angeles	California	9,519,338	9,871,506
Harris	Texas	3,400,578	3,596,086
Maricopa	Arizona	3,072,149	3,389,260
Kings	New York	2,465,326	2,472,523
Wayne	Michigan	2,061,162	2,028,778
King	Washington	1,737,034	1,761,411
New York	New York	1,537,195	1,564,798
Cuyahoga	Ohio	1,393,978	1,363,888
Broward	Florida	1,623,018	1,731,347
Allegheny	Pennsylvania	1,281,666	1,261,303

SOURCE: Bureau of the Census

18. How do the populations for Los Angeles County in 2000 and 2003 compare?
19. Which county had the greatest increase in population from 2000 to 2003?  
What was the increase?
20. Which counties had a decrease in population from 2000 to 2003? Write the decreased amounts as percents.

For Exercises 21–23, use these data about planets in our solar system.

Planet	Average Distance From the Sun (millions of miles)	Diameter at Equator (miles)	Time to Circle the Sun	Time to Turn on Axis
Mercury	36	3,032	88 days	59 days
Venus	67	7,521	225 days	243 days
Earth	93	7,926	365 days	23.9 hours
Mars	142	4,222	687 days	24.6 hours
Jupiter	484	88,846	11.9 years	9.9 hours
Saturn	891	74,897	29 years	10.7 hours
Uranus	1,785	31,763	84 years	17.2 hours
Neptune	2,793	30,775	164 years	16.1 hours
Pluto	3,647	1,485	248 years	6 days

SOURCE: The National Space Science Data Center at NASA's Goddard Space Flight Center

21. Write a statement comparing the times taken by the various planets to circle the Sun.
22. Write a statement comparing the times taken by the planets to turn on their axes.
23. Mr. Martinelli's science class wants to make a scale model of the universe for the science fair. They need to make some calculations before building their model.
  - a. The diameter of the sun is 865,000 miles. If the class made Earth's diameter = 1 inch, what would be the diameter of the scale model of the Sun?
  - b. If they made Earth's diameter = 1 inch, what would be the diameter of the scale model of Jupiter?
  - c. If they made Earth's diameter = 1 inch, what would be the diameter of the scale model of Pluto?
  - d. If the class placed the planets by using a scale of 1 inch = 1 million miles, how many feet from the Sun would the model of Mercury have to be placed?
  - e. Using the scale 1 inch = 1 million miles, how far from the Sun would the model of Earth have to be placed?
  - f. Using the scale 1 inch = 1 million miles, how far from the Sun would the model of Pluto have to be placed?