

Lesson 3

Audio Tutor 2/15 Listen and Understand

Compare and Order Fractions, Decimals, and Percents

Objective Compare and order fractions, decimals, and percents.



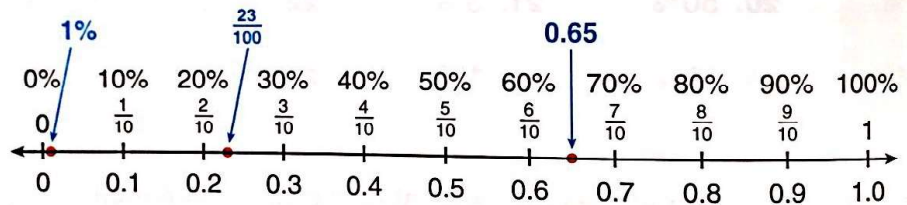
Of more than 45,000 malls in the United States, 3,000 are in Texas alone.

Learn About It

In Texas, 1% of malls are mega-malls with more than a million square feet, 0.65 are small malls of 100,000 square feet or less, and $\frac{23}{100}$ are between 100,001 and 200,000 square feet. Of which size mall does Texas have the greatest number? the least?

Different Ways to Compare Fractions, Decimals, and Percents

Way 1 You can use a number line to show parts of a unit.



Way 2 You can use place value.

- Write all the numbers as decimals in hundredths.
- Compare.

1%
.65
 $\frac{23}{100}$

ones	tenths	hundredths
0	.	0
0	.	6
0	.	2

Solution: $0.65 > \frac{23}{100} > 1\%$, so most of the malls in Texas are small. The least number of malls are mega-malls.

Another Example

Compare With Mixed Numbers

To compare 20%, 1.10, 0.6%, and $1\frac{4}{5}$, write each number in the same form. In this case, it is easiest to use the decimal form.

$$20\% = 0.20$$

$$1.10 = 1.10$$

$$0.6\% = 0.006$$

$$1\frac{4}{5} = \frac{9}{5} = 1.8$$

$$1\frac{4}{5} > 1.10 > 20\% > 0.6\%$$

Sometimes you need to find ratios that are greater than 100% or less than 1%.

Percents greater than 100% represent ratios greater than $\frac{100}{100}$, or 1.

$$120\% = \frac{120}{100}$$

$$120\% = \underline{1.20} = 1.2$$

Percents less than 1% represent ratios less than $\frac{1}{100}$, or 0.01.

$$0.9\% = \frac{0.9}{100} = \frac{9}{1000}$$

$$0.9\% = \underline{.009} = 0.009$$

Remove the percent sign.
Move the decimal point two places to the left.

Guided Practice

Write > or < for each .

1. 49% 0.51

2. 0.1 1%

Write each in two different forms.

3. 0.3%

4. 200%

5. $1\frac{3}{4}$


6. 0.6

Order each set from the least to the greatest part of a unit.

7. 0.3% 0.65 $\frac{3}{5}$ 3.0

8. $\frac{5}{6}$ $\frac{80}{100}$ 1.2 1.9%

9. 0.12 $\frac{1}{10}$ 11% 0.20

Explain Your Thinking  In Exercise 9, in what form did you choose to write the numbers before comparing? Explain your choice.

Practice and Problem Solving

Write > or < for each .

10. 25% 2.5%

11. 0.001 1%

12. $\frac{67}{100}$ 6.7%

Write each in two different forms.

13. 165%

14. 275%

15. 0.7%

16. 0.2

 Go On

Name _____ Date _____

Compare and Order Fractions, Decimals, and Percents

Write $>$ or $<$ for each \bigcirc .

1. 46% \bigcirc 0.45

2. 0.3 \bigcirc 3%

Write each in two different forms.

3. 120%

4. 230%

5. 0.2%

6. 0.6%

7. 0.2

8. 325%

Order each set from the least to the greatest part of a unit.

9. 21% 0.22 $\frac{1}{5}$

10. 0.91 $\frac{9}{10}$ 89%

11. 5% $\frac{3}{5}$ 0.056

12. $\frac{3}{2}$ 120% 1.35

13. $\frac{4}{5}$ 82% 0.85

14. $\frac{6}{5}$ 1.25 140%

Test Prep

15. Which of the following is the same as 120% ?

A $\frac{6}{5}$

C $\frac{120}{10}$

B 1.25

D 12.0

16. Joe bought tickets redeemable for food, prizes, and rides at a grand opening. Joe used $\frac{1}{4}$ of the tickets for food and drinks, 30% for rides, and the rest to try to win prizes. What decimal represents the part of the tickets Joe used on prizes?

Compare and Order Fractions, Decimals, and Percents

Compare $\frac{1}{5}$, 0.32, and 28%.

How to Compare Ratios, Decimals, and Percents	
<p>Step 1: Write all the numbers as decimals in hundredths.</p> $\frac{1}{5} = \frac{20}{100} = 0.20$ $28\% = 0.28$	<p>Step 2: Compare the decimals.</p> $0.20 < 0.28 < 0.32$

Write each in two different forms.

- | | | | |
|-------------------|-------------------|------------------|---------|
| 1. 250% | 2. $\frac{1}{20}$ | 3. 0.6 | 4. 188% |
| _____ | _____ | _____ | _____ |
| 5. $\frac{2}{25}$ | 6. 175% | 7. $\frac{4}{5}$ | 8. 300% |
| _____ | _____ | _____ | _____ |

Order each set from the *least* to the *greatest* part of a unit.

- | | | |
|---------------------------|--------------------------------------|------------------------------|
| 9. 125% $\frac{3}{4}$ 1.5 | 10. $\frac{5}{4}$ 112% $\frac{4}{5}$ | 11. 4.32 412% $\frac{17}{4}$ |
| _____ | _____ | _____ |
| 12. 0.8 41% $\frac{6}{5}$ | 13. $\frac{2}{5}$ 0.2 42% | 14. 0.54 $\frac{1}{2}$ 52% |
| _____ | _____ | _____ |

Problem Solving

15. Four-fifths of the students in a sports survey said they liked soccer. 75% liked hockey. Which sport did more students like?
- _____

Show Your Work