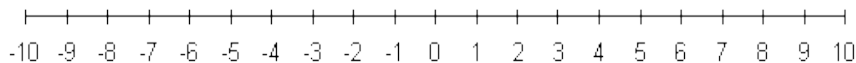


Notes Compare and Order Rational Numbers

How Do You Compare and Order Rational Numbers?

1. A number line can help you compare and order rational numbers. On a number line, positive numbers are to the right of 0, and negative numbers are to the left of 0.



2. You can also compare and order rational numbers without a number line. If the rational numbers you are comparing are in **different** forms, use these guidelines to convert them into the same form:

Conversion	Guideline	Example
Fraction to a decimal	<ul style="list-style-type: none"> ● Divide the numerator by the denominator 	$\frac{3}{4} = 3 \div 4 = .75$
Decimal less than 1 to a fraction	<ul style="list-style-type: none"> ● Use the smallest place value, the one farthest to the right, to determine the denominator of the fraction. ● Use the digits to the right of the decimal point to determine the numerator of the fraction. 	$0.35 = \frac{35}{100}$
Decimal greater than 1 to a mixed number	<ul style="list-style-type: none"> ● Use the digits to the left of the decimal point as the whole-number part of the mixed number. ● Convert the digits to the right of the decimal point to a fraction. 	$3.28 = 3 \frac{28}{100}$
Decimal to a percent	<ul style="list-style-type: none"> ● Move the decimal point two places to the right. ● Put a percent sign after the number. 	$0.45 = 45\%$
Percent to a decimal	<ul style="list-style-type: none"> ● Move the decimal point two places to the left. ● Drop the percent sign. 	$3.5\% = 0.035$
Fraction to a percent	<ul style="list-style-type: none"> ● First convert the fraction to a decimal. ● Then convert the decimal to a percent. 	$\frac{1}{5} = 0.20 = 20\%$
Percent to a fraction	<ul style="list-style-type: none"> ● Express the percent as a fraction with a denominator of 100. ● If the percent is greater than 100%, it may be expressed as a mixed number. 	$35\% = \frac{35}{100}$ $125\% = \frac{125}{100} = 1 \frac{25}{100}$

*If the rational numbers you wish to compare are in the **same** form, use these rules to compare and order them:

- Order decimal numbers by comparing the digits in each place value from left to right. If the decimal numbers do not have the same number of decimal places, write zeros behind the last digit to the right of the decimal point. This does not change the value of a decimal. For example, 3.51 is equal to 3.5100.
- If two fractions have the same denominator, compare their numerators.
- If two fractions do not have the same denominator, find a common denominator and then compare the numerators.