

Comparing Decimals



Steps:

1. Compare the whole numbers first!

Before looking at the decimal parts, check if there are whole numbers (numbers left of the decimal point)

-if the whole numbers are different, compare which is bigger

$6.45 > 4.45$ (6 is bigger than 4)

-if the whole numbers are the same, move to comparing the decimal part



6.47 6.57
↓ ↓
same same



Since the digits in the ones place are the same, you need to move to the **tenths** place to compare 4 and 5



2. Compare the decimals from left to right. You need to compare the digits in each place value. (tenths, hundredths etc.)

- First, compare the digits in the tenths → 4.6700 4.68
- If the digits in the tenths are the same, move to the next place value called hundredths.
- Next, compare the digits in the hundredths → 4.6700 4.68
- If the digits are different in the place value position, decide which digit is bigger.

3. Then write the sign for greater than, less than or equal to.

Remember: When you read a decimal say the word "**and**" for the decimal point. Also, let the 'big open mouth' face the bigger number when comparing decimals.

Note: You can put a zero as a place holder when comparing decimals. Example, let us compare the two numbers below.

8.3 8.30
 8.30 and 8.30 are equal

(Say eight and three tenths is equal to eight)

Look at the place value chart.
Let us compare 37.605 and 37.65



1st number

| millions | Hundred-thousands | Ten-thousands | thousands | hundreds | tens | ones | . | tenths | hundredths | thousandths |
|----------|-------------------|---------------|-----------|----------|------|------|---|--------|------------|-------------|
| | | | | | 3 | 7 | . | 6 | 0 | 5 |



2nd number

| millions | Hundred-thousands | Ten-thousands | thousands | hundreds | tens | ones | . | tenths | hundredths | thousandths |
|----------|-------------------|---------------|-----------|----------|------|------|---|--------|------------|-------------|
| | | | | | 3 | 7 | . | 6 | 5 | |

Write $>$, $<$ or $=$ to compare the decimals.

$$37.605 < 37.65$$

- The tens were the same so we moved to the ones.
- The ones were the same so we moved to the tenths.
- The tenths were the same so we moved to the hundredths.
- There were 0 hundredths in 37.605 and 5 hundredths in 37.65.

Now You Try!

Look at the place value chart.

Let us compare 29.30 and 29.3

Put the numbers on the place value chart.



1st number

| millions | Hundred-thousands | Ten-thousands | thousands | hundreds | tens | ones | . | tenths | hundredths | thousandths |
|----------|-------------------|---------------|-----------|----------|----------------------|----------------------|---|----------------------|----------------------|-------------|
| | | | | | <input type="text"/> | <input type="text"/> | . | <input type="text"/> | <input type="text"/> | |



2nd number

| millions | Hundred-thousands | Ten-thousands | thousands | hundreds | tens | ones | . | tenths | hundredths | thousandths |
|----------|-------------------|---------------|-----------|----------|----------------------|----------------------|---|----------------------|----------------------|-------------|
| | | | | | <input type="text"/> | <input type="text"/> | . | <input type="text"/> | <input type="text"/> | |

Write $>$, $<$ or $=$ to compare the decimals.

29.30 29.3



Are you ready to practice?



| millions | Hundred-thousands | Ten-thousands | thousands | hundreds | tens | ones | . | tenths | hundredths | thousandths |
|----------|-------------------|---------------|-----------|----------|------|------|---|--------|------------|-------------|
| | | | | | | | . | | | |

Are the two decimals equivalent? Write yes or no.

0.4 and 0.40 _____

0.1 and 0.01 _____

0.50 and 0.5 _____

0.20 and 0.02 _____

0.9 and 0.90 _____

0.18 and 0.81 _____

Write $>$, $<$ or $=$ to compare the decimals.

0.45 0.35

0.4 0.6

0.9 0.90

0.6 0.64

0.50 0.55

0.7 0.17

0.02 0.22

0.48 0.4



Ordering Decimals



Important: ones are greater than tenths
tenths are greater than hundredths
hundredths are greater than thousandths

| millions | Hundred-thousands | Ten-thousands | thousands | hundreds | tens | ones | . | tenths | hundredths | thousandths |
|----------|-------------------|---------------|-----------|----------|------|------|---|--------|------------|-------------|
| | | | | | | | . | | | |

Examples

Order the decimals from greatest to least.

A. 0.45, 0.54, 0.40, 0.04

| | | | |
|------|------|------|------|
| 0.54 | 0.45 | 0.40 | 0.04 |
|------|------|------|------|

Line up the digits

0.45
0.54
0.40
0.04

B. 0.13, 0.31, 0.3, 0.01, 0.03

| | | | | |
|------|-----|------|------|------|
| 0.31 | 0.3 | 0.13 | 0.03 | 0.01 |
|------|-----|------|------|------|

Line up the digits

0.13
0.31
0.30
0.01
0.03

Write a 0 as a place holder.

Order the decimals from least to greatest

C. 0.4, 0.5, 0.04, 0.05, 0.45

| | | | | |
|------|------|-----|------|-----|
| 0.04 | 0.05 | 0.4 | 0.45 | 0.5 |
|------|------|-----|------|-----|

Line up the digits

0.40
0.50
0.04
0.05
0.45

Write a 0 as a place holder.



STOP! Do not make these common errors.

1.If a decimal has more digits, that does not mean it is bigger. You must look at the place value of each digit.

Example: 3.007 is not greater than 3.8



Are you ready to practice?



| millions | Hundred-thousands | Ten-thousands | thousands | hundreds | tens | ones | . | tenths | hundredths | thousandths |
|----------|-------------------|---------------|-----------|----------|------|------|---|--------|------------|-------------|
| | | | | | | | . | | | |

A. Order the decimals from greatest to least.

0.147, 0.243, 0.202, 0.215, 0.041

| | | | | |
|--|--|--|--|--|
| | | | | |
|--|--|--|--|--|

Line up your decimals here

| |
|--|
| |
| |
| |
| |
| |

B. Order the decimals from least to greatest.

0.67, 0.7, 0.76, 0.07, 0.6

| | | | | |
|--|--|--|--|--|
| | | | | |
|--|--|--|--|--|

Line up your decimals here

| |
|--|
| |
| |
| |
| |
| |

WORD FORM, EXPANDED FORM AND STANDARD FORM FOR DECIMALS

27.73 – **STANDARD FORM (written in numbers)**

twenty-seven and seventy-three hundredths – **WORD FORM (written in words)**

$20 + 7 + 0.7 + 0.03$ – **EXPANDED FORM (the decimal is expanded by showing the value of each digit using the plus sign)**

Rounding Decimals



Find your place. (You can underline the place you are rounding.)

Look next door. (You can box the digit that is next door.)

Five or greater just add one more  (If the digit next door is less than 5 you simply keep the digit you are rounding the same.)

All the digits in front stay the same.

All digits BEHIND, zero's their name!

Example: Round the decimal to the nearest tenths.

| | | | | | | | |
|---|------|------|---|--------|------------|---|-----------|
| | tens | ones | | tenths | hundredths | | |
| 2 | 8 | . | 3 | 5 | | → | 2 8 . 4 0 |

- ★ The digit next door is 5 so we must add 1 more to the tenths.
- ★ If you add 1 more to the 3 in the tenths it becomes 4 tenths.
- ★ Remember to keep the digits in tens and ones the same since they are in the front.
- ★ Also, all digits behind turn into to zero so 5 will turn into 0.
Your answer is 2 8 . 4 0
(Say : twenty-eight and forty hundredths)



Rounding Decimals Practice

Round to the nearest tenths.

7.29 _____

18.072 _____

Round to the nearest hundredths.

5.368 _____

146.074 _____

Rounding Whole Numbers to Millions



Find your place. (You can underline the place you are rounding.)

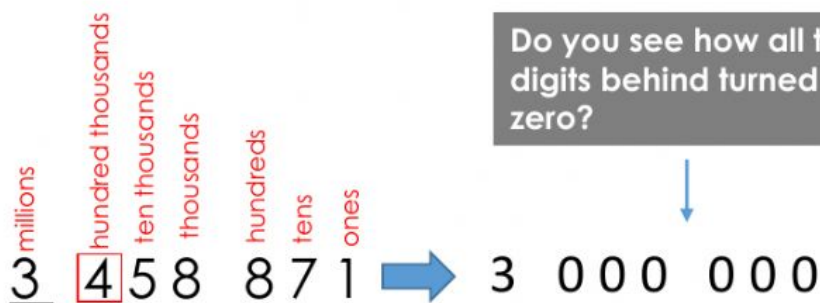
Look next door. (You can box the digit that is next door.)

Five or greater just add one more  (If the digit next door is less than 5 you simply keep the digit you are rounding the same.)

All the digits in front stay the same.

All digits BEHIND, zero's their name!

Example: Round the number to the nearest millions.



Rounding Whole Numbers Practice

Round to the nearest **millions**.

5 736 091 _____

Round to the nearest **hundreds**.

2 813 748 _____ 5 237 _____

491 _____

Round to the nearest **ten thousands**.

15 803 _____