

Name _____

Date _____ HR# _____

PROBLEM 3.5 – ORDERING DECIMALS

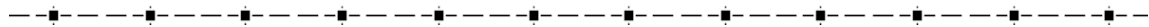
Ordering Decimals

The decimal number system is based on place value. The value of a digit in a number depends on the place where it is written. So the “2” in “20” has a different meaning from the “2” in “0.02.” The chart below shows the place value for each digit of the number 5,620.301.

5	6	2	0	3	0	1
<i>Thousands</i>	<i>Hundreds</i>	<i>Tens</i>	<i>Ones</i>	<i>Tenths</i>	<i>Hundredths</i>	<i>Thousandths</i>

When you read decimal numbers that are greater than one, you say “and” to separate the whole number and decimal parts. For 2.5 you say “2 and 5 tenths.”

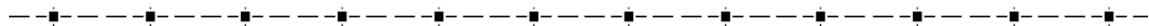
Getting Ready for Problem 3.5



Consider these numbers:

2 0.2 20 0.00002

- How does place value tell you which number is greatest?



Decimals can also help you to answer questions like the following:

How tall am I?

Who is the tallest person in our class?

How many people are injured by doors every year?

As you work with decimals in this problem, think about place value and

how it helps you to sort numbers.

A. The table at the right shows the heights of a class of sixth-graders.

- Write Beth and Lana's heights as fractions. Who is taller?

Beth = Lana =

- Order the students according to height from the shortest to the tallest. (number beside the table)

B. The federal government keeps track of all kinds of interesting data. The table at the right shows the number of people injured by various household items in a recent year per thousand U.S. residents.

- Order these items by the number of people injured from the least to the greatest. (number beside the table)
- Which are more dangerous: beds or carpets? How do you know?
- Which item injured twice as many people as ladders?
- Which item injured about 10 times as many people as televisions?

C. What strategies did you use to order and compare the decimals in each situation?

Students' Heights

Student	Height (m)
Alan	1.45
Beth	1.52
Juan	1.72
Dave	1.24
Eddie	1.22
Fred	1.66
Greg	1.3
Hiroko	1.26
Abey	1.63
Joan	1.58
Karl	1.23
Lana	1.5
Maria	1.27

Injuries From Household Items

Item	People Injured (per thousand U.S. residents)
Bathtubs and showers	0.674
Beds	1.569
Carpets and rugs	0.404
Ceilings and walls	0.894
Chairs	1.008
Doors	1.143
Ladders	0.563
Tables	1.051
Televisions	0.140
Toilets	0.195
Windows	0.446

Problem 3.5

Applications

Connections

ACE

Extensions

Applications

For each pair of numbers in Exercises 1–10, insert $<$, $>$, or $=$ to make a true statement.

1. 0.205 0.21

2. 0.1 0.1000

3. 0.04 0.050

4. 1.03 0.03

5. $\frac{5}{10}$ 0.6

6. $\frac{3}{5}$ 0.3

7. 0.4 $\frac{2}{5}$

8. 0.7 $\frac{1}{2}$

9. 0.52 $\frac{2}{4}$

10. 0.41 0.405

11. For each pair of numbers in Exercises 1–10, write a number that is between the two given numbers. If this is not possible explain why.

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

12. Which is greater, 0.45 or 0.9? Explain your reasoning. Draw a picture if it helps your thinking.

13. Which is greater, seventy-five hundredths or six tenths? Explain. Draw a picture if needed.

14. Which is greater, 0.6 or 0.60? Explain. Draw a picture if needed.

For Exercises 15 – 18, rewrite the numbers in order from least to greatest.

15. 0.33, 0.12, 0.127, 0.2, $\frac{45}{10}$

16. $\frac{45}{10}$, $\frac{3}{1,000}$, 0.005, 0.34

17. 0.418, $\frac{4}{10}$, $\frac{40}{1,000}$, 0.481

18. 0.827, 1.23, $\frac{987}{100}$, $\frac{987}{1,000}$