

# Feb 13: Do NOW

1: If 58 out of 100 students in a school are boys, then write a decimal for the part of the school that consists of boys.

2: A computer processes information in nanoseconds. A nanosecond is one billionth of a second. Write this number as a decimal.

3: Five swimmers are entered into a competition. Four of the swimmers have had their turns. Their scores are 9.8 s, 9.75 s, 9.79 s, and 9.81 s. What score must the last swimmer get in order to win the competition

4: To make a miniature ice cream truck, you need tires with a diameter between 1.465 cm and 1.472 cm. Will a tire that is 1.4691 cm in diameter work? Explain why or why not.

# Feb 13 Do NOW: Ans

- 1: If 58 out of 100 students in a school are boys, then write a decimal for the part of the school that consists of boys. **Analysis:** We can write a fraction and a decimal for the part of the school that consists of boys. **fraction decimal** 0.58 Answer: 0.58
- 2: A computer processes information in nanoseconds. A nanosecond is one billionth of a second. Write this number as a decimal. **Analysis:** We can write a one billionth as a fraction and then as a decimal. **fraction decimal** 0.000000001 Answer: A nanosecond, one billionth of a second, is written as 0.000000001 in decimal form.
- 3: Five swimmers are entered into a competition. Four of the swimmers have had their turns. Their scores are 9.8 s, 9.75 s, 9.79 s, and 9.81 s. What score must the last swimmer get in order to win the competition? **Analysis:** We must order these decimals from least to greatest. Then we must determine how the least compares with the winning score. Step 1: 9.80 9.75 9.79 9.81 Step 2: The least decimal is 9.75. Now we must determine how 9.75 compares with the winning score. Answer: The last swimmer must get a score less than 9.75 s in order to win.
- 4: To make a miniature ice cream truck, you need tires with a diameter between 1.465 cm and 1.472 cm. Will a tire that is 1.4691 cm in diameter work? Explain why or why not. **Analysis:** We must compare and order these decimals to help us solve this problem. Specifically, we need to determine if the third decimal is between the first two. Step 1: Let's start by writing one decimal beneath the other in their original order. We will place an arrow next to 1.4691 so that we can track its value. 1.4650 1.4720 1.4691  
Step 2: Now let's order these decimals from least to greatest. 1.4650 1.4691 1.4720  
Step 3: Now we must determine if the third decimal (indicated by the arrow) is between the first two. Answer: A tire that is 1.4691 cm in diameter will work since 1.4691 is between 1.465 and 1.472.

# Page 121, Decimals: $1/10$ , $1/100$ , $1/1000$

Thousand (1000)	Hundred (100)	Ten (10)	One (1)	.	Tenths ( $1/10$ )	Hundredths ( $1/100$ )	Thousandths ( $1/1000$ )	Ten-thousandths ( $1/10000$ )	Hundred-thousandths
	6	2	2	.	4	0	7	0	0

1. We will explore decimals this week
2. Moving from right to left, each place value grid is 10 times greater than the next place to its right.
3. In a place value grid, each place value = the place value directly to its left divided by 10.
4. Rewrite each division as a multiplication and then find the product.
  - a.  $100 \div 10 = 10$ .  $100 \times (1/10) = 10$
  - b. (Correction!)  $10 \div 10 = 1$ .  $10 \times (1/10) = 1$
5. In a place value grid, the value of a place is  $1/10$  of the value of the place directly to its left
- 6a. Rewrite the division expression as an equivalent multiplication expression and find product  $1 \div 10 = 1/10$ .  $1 \times (1/10) = 1/10$
- 6b. Since each expression above are both  $= 1/10$ , the value of the place to the right of the ones place is the TENTHS place.

# Page 122: Decimals (con't)

7. The point in a decimal number is used to separate the whole number part and the fraction part of a number.
8. Label the number line using the decimals numbers in tenths: **357.0** (357.1)(357.2)(357.3) (357.4)**357.5**(357.6)(357.7)(357.8)(357.9) **358.0**
- 9a. The fraction that represents the value of the place to the right of the tenths place is  $\frac{1}{100}$
- 9b. The fraction that represents the next place value is  $\frac{1}{1000}$ . (see grid)
- 9c.  $622.407 = 600 + 20 + 2 + (\frac{4}{10}) + (\frac{7}{1000})$
- 9d. Fraction equivalent to  $622.407 = 622 \frac{407}{1000}$

# Page 125, Decimals: Ordering and Rounding


1. We will learn how to order and round decimals.
2. Ex: 2.35, 3.17, 2.49, 3.05. Since each of the record times shown has a digit in the hundredths place, we can round each number to the nearest tenth.
3. Round 11.10 to the nearest tenth.
  - a. The decimal 0.10 and the fraction  $10/100$  both represent ten hundredths.
  - b. Since  $10/100 = (1/10) \times (10/10)$ ,  $0.10 = 0.1$
  - c. The number 11.10 can also be written as the decimal 11.1
4. When rounding a number to the nearest tenth, look at the value of the digit in the hundredths place (to the right)
5. Round each number to the nearest tenth.
  - a.  $10.587 \approx 10.6$
  - b.  $10.459 \approx 10.5$
  - c.  $10.345 \approx 10.3$

# Page 126, Decimals: Ordering and Rounding (con't)

6. Refer to the table of 200-m indoor cycling:

a. Please plot using the bar graph

Year	Times(s)	Rounded Value
1956	11.1	11.1
1961	10.99	11.0
1987	10.587	10.6
1989	10.459	10.5
1990	10.345	10.3

b. The  symbol on the x-axis represents a broken line and the time in seconds, between 0 and 10.0

c. The graph tells that as the years go by, the record times became shorter.

7. To order & compare decimals:

- Arrange the numbers in a place value grid.
- Start by comparing the digits in the greatest place to the left of the decimal point.
- Moving into the right. Compare the values of the digits in the corresponding places.

# Feb 13 Homework (Due Feb 27)

Math III: Pages 121-128 (all) in the reader.  
Worksheets on Fraction to Decimal & Ratios

Math IV: Pages 121 -128 (all) in the reader.  
Worksheets on fraction to Decimal & Ratios

Please Note:

No class next Sunday 2/20.

Chinese New Year Celebration at Wilbur Cross High  
School, New Haven