

Module C

Homework Expectations/Considerations

§4.1 Place Values of Decimals and Rounding

When translating decimals into words, make sure you know where the word “and” goes and use it only for the decimal part of the number.

EXAMPLE: Write 23.056 in words

twenty-three **and** fifty-six thousandths

Rounding: You will be asked to round values in almost every module, so be sure you know your place values.

EXAMPLE: Round 23,456.02857 to the nearest thousandths

23,456.02857 \approx 23,456.029

Note the symbol \approx means “approximately” to indicate rounding

§4.2 Converting Between Fractions and Decimals

When comparing a fraction to a decimal, change the fraction to a decimal, then compare the two decimals.

EXAMPLE: Complete the statement using the symbol $<$ or $>$. $2\frac{11}{17}$ _____ 2.638

$$\begin{array}{r} .64 \\ 17 \overline{)11.00} \\ \underline{-102} \\ 80 \\ \underline{-68} \\ 12 \end{array}$$

$$2\frac{11}{17} \approx 2.64 \text{ so}$$

$$2\frac{11}{17} > 2.638$$

Note the division process stopped once we determined the quotient was 0.64 because $0.64 = 0.640$ which is larger than 0.638. Thus, 2.64 is larger than 2.638

§4.3 Adding and Subtracting Decimals

The words “subtract 5.27 from 8” reverse the order of the given numbers.

EXAMPLE: Subtract 5.27 from 8

$$\boxed{8 - 5.27 = 2.73}$$

(formal work with the answer)

8.00 Keep scratch work separate
-5.27 on the side, away from
----- formal work but on the
2.73 same paper

§4.4 Multiplying Decimals

We align the digits (and not the decimal) when multiplying two decimals. Right justify the values on two rows – note the decimal points may not necessarily align vertically. Note the result of multiplying two numbers is called a **product**.

EXAMPLE: Find the product of 1.12 and 4.5

$$\begin{array}{r} 1.12 \\ \times 4.5 \\ \hline 560 \\ 448 \\ \hline 5.040 \end{array}$$

To multiply by powers of 10 means to multiply a number by 10, 10^2 , 10^3 , etc. In other words, you multiply a number by 10, 100, 1000, etc.

There is a short cut to multiplying by powers of 10. Learn it to save time on homework and exam problems.

EXAMPLE: Find the product of 34.0678 and 1000

$$34.0678 \times 1000$$
$$\boxed{34,067.8}$$

§4.5 Dividing Decimals

There is a shortcut to dividing by powers of ten. Note the result of dividing two numbers is called a **quotient**.

EXAMPLE: Find the quotient of 973.10398 and 100

$$973.10398 \div 100$$
$$\boxed{9.7310398}$$

It is very important to understand where the decimal point is located in your answer when dividing two decimals. Be very neat and precise with your work to avoid mistakes.

EXAMPLE: Divide 165.6 by 3.6

$$\boxed{165.6 \div 3.6 = 46}$$

$$\begin{array}{r} 46 \\ 3.6 \overline{)165.6} \\ \underline{-144} \downarrow \\ 216 \\ \underline{-216} \\ 0 \end{array}$$

scratch work

$$\begin{array}{r} 2 \\ 36 \\ \times 4 \\ \hline 144 \end{array}$$

$$\begin{array}{r} 3 \\ 36 \\ \times 6 \\ \hline 216 \end{array}$$

Keep the scratch work separate from the final boxed answer.

DO NOT WRITE SOMETHING LIKE THIS because the expressions cannot be mixed:

$$\boxed{165.6 \div 3.6 = 3.6 \overline{)46}}$$