JMEE

Journal of Marketing and Emerging Economics

| e-ISSN: 2792-4009 | www.openaccessjournals.eu | Volume: 3 Issue: 2

Simple Fractions, Decimals, Periodic Fractions, Equations Involving a Whole Number and a Fractional Part

Yuldoshev Mansur Najmiddin ugli

mansuryuldoshev212901@mail.ru

Academic Lyceum of Tashkent State University of Economics lead math science teacher

Abstract. In this article, simple fractions, decimal fractions, periodic fractions are described in detail, and examples of equations involving whole and fractional parts of numbers are given.

Key words: fractions, natural numbers, decimal numbers, equation exercises, mathematical properties, etc.

.

Introduction. "Decimal numbers are simply another way of writing fractions. … Maximum flexibility is gained by understanding how the two symbol systems are related." (Van de Walle and Lovin 2006b, 107) All fractions can be expressed as terminating or repeating decimals and vice versa. Some students will already know the decimal equivalents of some simple fractions (e.g., 1 2 = 0.5, 1 4 = 0.25, 1 5 = 0.2) as well as any fraction with a denominator of 10, 100, or 1000. For example, to locate 0.75 on a number line, many students think of 0.75 as being three-fourths of the way from 0 to 1. Many students, however, believe that the only fractions that can be described by decimals are those with denominators, which are a power of 10 or a factor of a power of 10. By building on the connection between fractions and division, students should be able to represent any fraction in decimal form, using the calculator as an aid.

All fractions have equivalent decimal names. The decimal names may refer to a definite number of digits. These are terminating decimals. A terminating decimal can be easily renamed as a fraction with a denominator that is a power of 10 (e.g., 0.125, read as 125 thousandths, and written as a fraction 125 1000 , which can be simplified to 1 8). Knowing common fraction-decimal relationships can help students interpret decimals meaningfully. For example, they see 0.23 and realize that it is almost 1 4. It is important that students become proficient at correctly reading a decimal number. Reading 0.37 as thirty -seven hundredths, makes the conversion to 37 100 easy. Students often read 0.37 as "decimal three seven" or "point three seven," which does not provide context or frame of reference and should be avoided. Reinforce the importance of placing zero in front of the decimal to emphasize that it is less than 1. When some fractions are renamed as decimals, the decimal number contains one or more digits that repeat in a continuous pattern indefinitely (e.g., 1/ 3 = 0.333 . . .). These are repeating decimals. The three dots indicating the digits continue without end are called an ellipsis. In North America, the common representation for repeating decimals is to write the number with one set of the repeating digits, and then draw a bar over the digits that form the repeating pattern (0.3). The series of digits that repeat may be called a period. The bar is called a vinculum. Repeating decimals may also be renamed as fractions (e.g., 1 3). Characteristic patterns may be used to predict the decimal representation of these fracti ons and to predict the fraction representation of repeating decimals. Students should be introduced to the terminology "repeating" and "period" as well as bar notation used to indicate repeating periods.

JMEE

Journal of Marketing and Emerging Economics

| e-ISSN: 2792-4009 | www.openaccessjournals.eu | Volume: 3 Issue: 2

The patterns produced by fractions with a variety of denominators should be explored since many have particularly interesting periods.

To express an exact value for a repeating decimal, indicate the repeating section with a vinculum, or write the fraction equivalent. To indicate that the number is an approximation of the true value, use an equal sign with a dot over it (≐). Students should use calculators to explore both terminating and repeating decimals and when appropriate to find the decimal form for some fractions and predict the decimal for other fractions. Students should also be aware of the effect of calculator rounding (i.e., automatic rounding caused by the limit on the number of digits that the calculator can display). Where possible, students should use their knowledge of the patterns to determine the fractional form of repeating decimals. Expressing repeating decimals as fractions is more challenging since denominators of 10, 100, 1000 cannot be used. Repeating decimals can be expressed as fractions using denominators of 9, 99, 999, etc., depending on the number of decimal places in the period. Student understanding of this should evolve through discussions of familiar examples, such as 0.3. Students know it is equivalent to 1 3 , not 3 10. Ask students which denominator could be used for the n umerator 3, since the 3 is in the decimal form. Students should easily identify 3 9. In the example 0.7 , the 7 is in the tenths place, but tenths cannot be used since it is not exactly seven tenths. In this case ninths would be used, giving the fraction 7 9. In the example 0. 18, hundredths cannot be used since it is not exactly 18 hundredths, so 99 is used as the denominator, resulting in the fraction 18 99, which can be simplified to 2 11. Students should realize that fractions such as 1 6 = 0.16 are exact values whereas a calculator display that shows 0.166666667 is an approximation. When students round such values to 0.17 or 0.2, for example, it is important that they recognize that these are approximations, not exact values. Discussion may include real-life situations for which it might make sense to use approximations, such as the distance between towns, the amount of gas in a dirt-bike, mental calculation of discount amounts, etc.

To be efficient at comparing and ordering fractions and decimals students must understand the magnitude of these numbers in our number system and how they can be represented. They must realize that fractions and decimals are interchangeable names for the same quantity and must be able to convert one to the other. They must be proficient at renaming and simplifying fractions and use multiple strategies for comparing them. Have students continue to use conceptual methods to compare fractions and decimals, such as context problems and models. Students tend to think of fractions assets or regions whereas they think of decimals as being more like whole numbers. A significant goal of instruction in decimal and fraction numeration should be to help students see that both systems can be used to represent the same concepts. For this reason it is important that a variety of models and benchmarks be used. Money should not be used as the exclusive model for decimals as it is very limiting (typically only extends to hundredths).

Students should develop a variety of strategies to compare fractions. Students need experiences comparing fractions with the same denominator, with the same numerator, and with unlike denominators. If both fractions have the same denominator, the larger numerator represents the larger fraction (e.g., 5 8 > 3 8). If the denominators are different, students will write equivalent fractions with like denominators and then compare the numerators. If both fractions have the same numerator, the fraction with the smallest denominator is larger (e.g., 2 7 > 2 9). A rich understanding of place value allows students to compare and order decimals using strategies similar to those used with whole numbers. Once students develop a sense of the benchmark fractions (0, 1 2, 1, 1 ½ , 2) and know the decimal equivalents (0, 0.5, 1, 1.5, 2), they are able to use them interchangeably as a powerful strategy for comparing and ordering fractions and decimals. Students can change fractions greater than one, such as 10 8 or 7 5, to mixed fractions if they choose. Repeated addition can be used as a strategy to write mixed numbers. Recognizing what makes one whole, 10 8 can be rewritten as 8 8 + 2 8 . Have students apply their prior knowledge of equivalent fractions to help determine a fraction that is between two given fractions in an ordered sequence. Some students may have difficulty identifying a number that is between two given numbers, especially when the numbers given are fractions with the same denominator and are close in value (e.g., 3 10 > ? > 4 10). These two fractions could be rewritten as 6 20 and 8 20. Students can now more easily identify that 7 20 is a possible answer. If the fractions are rewritten as 12 40 and 16 40, students can see that there are more options. When working with decimal numbers, students can use place value for comparison. With numbers such as 0.3 and 0.4, they can use the hundredths instead of tenths (e.g., 38 hundredths is between 3 tenths and 4 tenths). Students can use similar strategies learned from placing fractions on a number line to identify a fraction between two decimals (e.g., 0.4 > ? 8 > 0.7), a decimal between two fractions, or a number between a given decimal and a given fraction.

References:

1. Abdug’aniyeva Xumora Baxtiyor qizi, O’roqov Uchqun Yunusovich. Davlat maqsadli jamg‘armalarining iqtisodiy-ijtimoiy ahamiyati va so’ngi yillardagi o’zgarishlar. Journal of new century innovations. Volume – 6_Issue-7_Iyun_2022
2. Best-Practice Guide for a Positive Business and Investment Climate.Organization for Security and Co-operation in Europe (OSCE). 2018.
3. Vaxabov A.V., Xajibakiev Sh.X., Muminov N.G. Xorijiy investitsiyalar. O’quv qo’llanma. – T.: «Moliya», 2010.
4. Schwab K. World Economic Forum: The Global Competitiveness Report. Geneva: World Economic Forum, 2013.
5. Sultonov Sh., Chinqulov Q., G‘ofurova U., Safarova N. Biznes moliyasi. O‘quv qo‘llanma. – T.: «Iqtisod-moliya», 2019.
6. Н.Х.Хайдаров. Роль иностранных инвестиций в финансовом оздоровлении Узбекистана. Финансы и кредит, 2001
7. Nizamiddin Khaydarov. Agricultural Development in Uzbekistan: Agricultural Reforms versus Transboundary Water Issues. Developing Country Studies www. iiste. org. ISSN. 2015