

Meaning of Fractions:

1. Spell “numerator,” “denominator”; explain what they represent in the part-of-a-whole meaning.
2. Know which part of a fraction cannot be zero; FULLY explain using the part-of-a-whole meaning.
3. Find fractions shown by given diagrams; draw a figure representing a given fraction (see HW#1).
4. Define “equivalent fractions”; find fractions equivalent to a given one, including like 6-1A #14.
5. State the FLF verbally; demonstrate/recognize it to create equivalent fractions/lowest terms.
6. Apply various techniques for ordering two or more fractions; choose the most effective.
7. Explain what “denseness” means; demonstrate it when given two unequal fractions.

Fraction Arithmetic:

1. Add, subtract, multiply, and divide fractions using ordinary classroom algorithms.
2. Solve word problems requiring fraction arithmetic, as in text homework.
3. Draw, label pictures to add/subtract fractions; explain how the answer is seen.
4. Convert between mixed numbers and improper fractions, with and without the shortcut.
5. Add, subtract entirely in mixed numbers. Use the Distributive Property to multiply.
6. Draw, label diagrams to multiply fractions, including improper; explain how answer is seen.
7. Demonstrate complete “pre-cancelling” in multiplying or dividing a set of fractions.
8. Draw and label pictures to perform division; explain how each digit in the answer is shown.

Word Problems, Number Sentences, and Properties: for fractions AND decimals

1. Name the word problem scenario in a given problem; make up a problem for a given scenario.
2. Spell the names for parts of number sentences; make up a number sentence for assigned roles.
3. Verbally explain an arithmetic property asked about by name. (Formulas will not be accepted.)
4. Spell full property names given their number sentences; finish sentences showing given properties.

Ratio and Proportion:

1. Understand “to,” colon or “for/out of every” sentences. Answer ratio questions using these.
2. Use rep. sets, unit-rate, scaling, prop. equations to solve word problems. Explain when asked.
3. Solve word problems using charts, including “parts” recipes.

Decimals and Percents:

1. Convert between decimal notation, “word form,” expanded form with or without exponents.
2. Find all decimals satisfying given clues, including clues about rounding and negative exponents.
3. Add, subtract, multiply, and divide decimal numbers by hand. Solve word problems.
4. Know what we do with the decimal points for each arithmetic operation, and why.
5. Recognize the three types of decimal appearances. Use and understand correct notation for each.
6. Know the definition of the term “rational” vs. how we RECOGNIZE decimals that are rational.
7. Use correct notation to convert among decimals, percents, and fractions.
8. Order a given collection of decimals, including non-terminating ones.
9. Demonstrate denseness for decimals, including rational and irrational numbers between two others.
10. Choose the larger of two quantities described as fractions, decimals, or percents, as in HW.
11. Answer problems such as “If x is 183.6% of y , is $x > y$ or $y > x$?”
12. Solve percent word problems that don’t have any “real life” context.

Statistics:

1. Read and interpret graphical information, as in 10-1 and 10-2 HW.
2. Find the mean, median, and mode(s) of a list of scores.
3. Find the mean or total when individual scores are not given (see 10-3 HW).
4. Given a mean, find the new mean when one or more new scores are added, deleted.
5. Find a mean when given the means for some groups of data, as in the cheerleader problem.
6. Create data that has specified mean, median, mode, or standard deviation behavior, as in HW.
7. Be able to explain situations that aren't possible. Be prepared to use 0 as a score!
8. Find the 5-Number Summary for a given set of scores.

Probability:

1. Be prepared for multi-stage experiments: two or more dice, coins, spinners, etc.
2. Determine probabilities of events, including the words "and," "or," and variations of "at least/most."
3. Convert between the probability that an event happens and that it doesn't happen.
4. Given a uniform sample space without experiment (as in HW), find probabilities about it.

Bring a non-cell phone calculator (no text-based memory) for the exam.