

FRACTIONS

The student will be able to:

1. Perform basic operations with common fractions: addition, subtraction, multiplication, and division .

Common fractions, such as $\frac{1}{2}$, $\frac{2}{3}$, and $\frac{3}{4}$, are used on the GED Test

- Demonstrate an understanding of the concept of fractions
 - A fraction is the part over the whole
 - Equivalent fractions may look different but have the same value ($\frac{1}{2} = \frac{16}{32}$)
 - When the numerator and the denominator are the same, the fraction equals 1
- Read, write, and draw proper fractions, improper fractions, and mixed numbers
- Find fractions and mixed numbers on a number line
- Understand the relative size of commonly used fractions
 - The larger the denominator, the smaller the fraction
- Learn strategies for comparing fractions
- Compare and order fractions
- Change fractions to equivalent decimals and percents
- Reduce or simplify common fractions, improper fractions, and mixed numbers
- Relate fraction concepts to real life: cooking, measuring, medicine, and shopping
- Use a calculator to compute fractions and mixed numbers

2. Apply appropriate strategies for solving fraction word problems.

- Read a problem several times
- Personalize the problem
- Draw a picture or diagram to help solve the problem
- Eliminate extraneous information
- Simplify the problem with easier numbers
- Use estimation to solve problems and assess the reasonableness of the answer
- Determine the number of steps and operations needed to solve the problem-
Students will often stop after the first step leading them to choose the wrong answer
- Determine if the answer makes sense

Recommendations for teaching fractions:

- Have students brainstorm ways fractions are used in “real life”
- Practice finding the fraction of a number. Be sure students understand that “of” means multiply. To find $\frac{2}{3}$ of 12 you need to multiply: $\frac{2}{3} \times 12 = 8$
- Demonstrate that multiplying 2 fractions yields a smaller answer: $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$
- Demonstrate that dividing 2 fractions yields a bigger number: $\frac{1}{2} \div \frac{1}{2} = 1$
- *Do not dally in fraction land. Do not let students get frustrated with too much computation. Focus on understanding and problem solving.*

Essential Fraction Vocabulary

Cancel: To find values that will divide evenly into the numerators and denominators of fractions to convert them into smaller fractions that are easier to work with.

Denominator: The bottom number of a fraction – The denominator indicates the total number of parts something is divided into

Equivalent: Fractions that are equal in value e.g. $\frac{5}{10}$ and $\frac{6}{12}$

Improper Fraction: A fraction in which the numerator is the same size or greater than the denominator

Lowest Common Denominator: The smallest number that the denominators of two or more fractions can be divided into

Lowest Terms: A fraction with a numerator and a denominator that can only be divided evenly by itself and one

Mixed Number: A number that contains both a whole number and a fractional amount

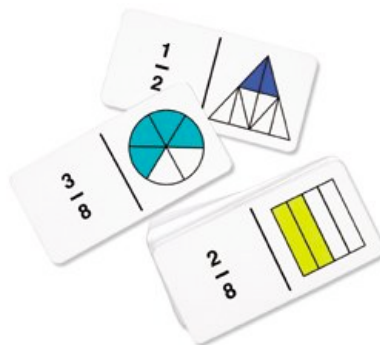
Numerator: The top number in a fraction – The numerator indicates number of parts you are focusing on

Proper Fraction: A fraction in which the numerator is smaller than the denominator

Reciprocal: The result of inverting numbers in a fraction ($\frac{3}{4}$ to $\frac{4}{3}$)

Reduce: To express a fraction in its lowest terms

Simplify: The same as reduce or change an improper fraction to a whole or mixed number



Fractions Assessment

Compare. Write $<$, $>$, or $=$.

1. $\frac{9}{10} \bigcirc \frac{3}{10}$	2. $\frac{1}{5} \bigcirc \frac{1}{3}$	3. $\frac{5}{9} \bigcirc \frac{2}{3}$
4. $1 \bigcirc \frac{7}{7}$	5. $\frac{1}{3} \bigcirc \frac{2}{7}$	6. $\frac{4}{5} \bigcirc \frac{6}{7}$

Order the fractions from least to greatest.

7. $\frac{7}{8}, 1, \frac{7}{10}$	8. $\frac{6}{8}, \frac{4}{8}, \frac{2}{8}$	9. $\frac{1}{2}, \frac{1}{6}, \frac{1}{7}$
10. $\frac{5}{6}, \frac{3}{5}, \frac{2}{3}$	11. $1, \frac{9}{10}, \frac{1}{2}$	12. $\frac{1}{2}, \frac{2}{7}, \frac{1}{4}$

Change to a mixed or whole number.

13. $\frac{12}{2} =$	14. $\frac{10}{8} =$	15. $\frac{23}{9} =$	16. $\frac{24}{7} =$
17. $\frac{19}{4} =$	18. $\frac{17}{5} =$	19. $\frac{19}{3} =$	20. $\frac{12}{6} =$

Circle the equal fractions.

21. $\frac{5}{10}$ $\frac{11}{16} \quad \frac{1}{2} \quad \frac{12}{7} \quad \frac{6}{12}$	22. $\frac{3}{9}$ $\frac{15}{45} \quad \frac{1}{3} \quad \frac{9}{3} \quad \frac{6}{9}$
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Write each fraction in simplest form.

23. $\frac{4}{24}$	24. $\frac{6}{16}$	25. $\frac{25}{50}$	26. $\frac{6}{12}$	27. $\frac{8}{24}$
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Write each mixed number as an improper fraction.

28. $1\frac{5}{9}$	29. $3\frac{1}{4}$	30. $4\frac{2}{5}$	31. $5\frac{1}{2}$
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Find the difference and write your answers in simplest form.

32. $\frac{1}{2}$ $-\frac{1}{6}$ _____	33. $\frac{4}{5}$ $-\frac{1}{2}$ _____	34. $\frac{3}{4}$ $-\frac{3}{8}$ _____
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Add and reduce your answers to lowest terms.

35. $\frac{5}{6}$ $+\frac{3}{9}$ _____	36. $1\frac{2}{5}$ $+5\frac{4}{10}$ _____	37. $4\frac{2}{3}$ $+2\frac{3}{4}$ _____
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Multiply. Write the answer in simplest form.

38. $\frac{1}{2} \cdot \frac{2}{4}$	39. $\frac{4}{5} \cdot \frac{5}{8}$	40. $\frac{9}{10} \cdot \frac{5}{6}$
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Divide. Write the answer in lowest terms.

41. $\frac{6}{7} \div \frac{2}{14}$	42. $\frac{5}{6} \div \frac{2}{3}$	43. $\frac{4}{7} \div \frac{2}{4}$
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44. $1 \frac{1}{2} \times 2 =$ _____

45. $6 \div 1 \frac{1}{2} =$ _____

46. Find $\frac{1}{2}$ of \$12.50 _____

47. Find $\frac{1}{3}$ of 36 _____

48. Find $\frac{2}{3}$ of 27 _____

Fraction Word Problems

1. Maria worked $7\frac{1}{2}$ hours on Friday, $8\frac{1}{2}$ hours on Saturday and $10\frac{1}{2}$ hours on Sunday. How many hours did she work all weekend ?

2. Maria's check was \$180.00. She plans on putting $\frac{1}{4}$ of this amount in the bank. How much money will she put in the bank ? _____
3. $3\frac{1}{2}$ inches of rain fell on Monday. $2\frac{1}{4}$ inches of rain fell on Tuesday. How much more rain fell on Monday? _____
4. 12,000 people are registered to vote. During the last election $\frac{3}{4}$ of registered voters voted. How many people voted ? _____
5. John has a 12 foot long board. How many $1\frac{1}{2}$ foot pieces can he cut ?

6. Peri needs to put in 40 hours this week. She worked $8\frac{1}{2}$ hours on Monday, $6\frac{1}{2}$ hours on Tuesday, 8 hours on Wednesday and $6\frac{1}{3}$ hours on Thursday. How many hours does she need to work on Friday to get to 40 ? _____
7. Maria needs $1\frac{3}{4}$ cups of flour to make one batch of oatmeal cookies. How much flour would she need if she tripled the recipe ? _____
8. Cory walks $1\frac{1}{2}$ miles every day. How many miles does he walk in a week ? _____

DMR

Student Inventory Fractions

Name _____ Date _____

*Answer each question below by putting a check mark after Yes or I need more work.
If you check yes, prove it by answering the question.*

1. **I can find equal fractions.**

Write 2 equal fractions for $1/3$ _____

Yes _____ I need more work _____

2. **I can reduce fractions to lowest terms.**

Reduce $6/8$ to lowest terms. _____

Yes _____ I need more work _____

3. **I can change an improper fraction to a mixed number.**

Change $15/2$ to a mixed number . _____

Yes _____ I need more work _____

4. **I can change a mixed number to an improper fraction.**

Change $5 \frac{1}{4}$ to an improper fraction = _____

Yes _____ I need more work _____

5. **I can order fractions.**

Order from smallest to biggest: $2/3$, $5/6$, $3/4$ _____

Yes _____ I need more work _____

6. **I can add fractions and mixed numbers.**

$1 \frac{1}{2} + 2/3 =$ _____

Yes _____ I need more work _____

7. **I can subtract fractions and mixed numbers.**

$2 \frac{3}{4} - 1 \frac{1}{2} =$ _____

Yes _____ I need more work _____

8. **I can multiply fractions and mixed numbers.**

$2 \frac{2}{5} \times 4 =$ _____

Yes _____ I need more work _____

9. **I can divide fractions and mixed numbers.**

6 divided by $1/2 =$ _____

Yes _____ I need more work _____

10. **I can answer one- step fraction word problems**

Yes _____ I need more work _____

11. **I can answer multi-step fraction word problems.**

Yes _____ I need more work _____