Unit 1: Rational Numbers Study Guide

Adding and Subtracting Fractions

Fill in the blank: The Butterfly Method:

Steps to Add and Subtract Fractions

1. Find the \_\_ \_\_ \_\_ of the\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. Rewrite fractions using \_\_\_\_\_\_\_\_\_\_\_\_ denominators. **OR**
3. Add/Sub \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
4. ALWAYS \_\_\_\_\_\_\_\_\_\_\_\_\_.

Evaluate the expressions (SHOW ALL WORK):

|  |  |
| --- | --- |
| 1. $\frac{1 }{2 }+ \frac{3}{5}=$
 | 6. $\frac{7}{12}-\frac{3}{8}=$ |
| 2. $\frac{5}{13}+\frac{2}{3}=$ | 7. $\frac{4}{15}-\frac{11}{20}=$ |
| 3. $\frac{11}{15}+(-\frac{2}{5})=$ | 8. $\frac{1}{12}\_{}+\frac{1}{12}=$ |
| 4. $6\frac{1}{2}+\frac{7}{9}=$ | 9. $\frac{5}{14}+(-\frac{5}{14})=$ |
| 5. $2\frac{1}{3}+4\frac{2}{3}-1\frac{1}{2}=$ | 10. $\frac{5}{7}+3\frac{1}{2}+\frac{1}{4}=$ |

Multiplying and Dividing Fractions

Fill in the Flowchart:



Evaluate the expressions (SHOW ALL WORK):

|  |  |
| --- | --- |
| 11.. $\frac{7}{10}x\frac{2}{21}=$ | 16.. $(-\frac{1}{3})×3\frac{1}{8}=$ |
| 12.. $\frac{5}{9}x\frac{7}{8}=$ | 17. $20÷\frac{8}{15}=$ |
| 13. $(4\frac{1}{2})(4\frac{1}{2})=$ | 18.. $-7×(\frac{2}{9}+\frac{1}{9})=$ |
| 14. $6\frac{1}{5}÷(-\frac{2}{3})=$ | 19. $17\frac{2}{3}÷(-\frac{2}{3})=$ |
| 15. $12÷\frac{3}{5}=$ | 20. $\frac{4}{5}∙\frac{15}{16}=$ |

WORD PROBLEMS

Use the keywords to fill in either multiplications, division, addition or subtraction for each column. Then add one more key word to each column.

|  |  |  |  |
| --- | --- | --- | --- |
| \_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Product, times, twice as many, total, triple\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Quotient, per, for each, average, split equally\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Sum, total, more than, Greater than, increased \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Difference, less than, how much more than, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

Use IPS to solve the word problems:

|  |  |
| --- | --- |
| 21. Deborah needs to make 16 costumes for the school play. Each costume requires $2\frac{1}{4}$ yards of material. How many yards of material will she need? | 24. Belinda baked 9 pies that weigh 20$\frac{1}{4}$ pounds total. How much does each pie weigh?  |
|  22. A runner jogs $5\frac{1}{4}$miles east,$4\frac{1}{5}$ miles south, and $3\frac{2}{8}$miles west. How far has she jogged?  | 25. If 2$\frac{1}{3}$ ounce of cough syrup is used from a 4$\frac{1}{9}$ounce bottle, how much is left? |
| 23. The Coffee Pub has cans of coffee that weigh $3\frac{1}{2}$ pounds each. The Pub has 8½ cans of coffee left. What is the total weight of 8½ cans?  | 26. A baker used $\frac{3}{4}$cup of flour to make $\frac{1}{4}$of a recipe. How much flour would the baker use to make the whole recipe? |