Name: Answer Key Date: _____

Chapter 4 Test Study Guide

¤ *Divisibility Rules*

Using your knowledge of divisibility rules, determine if the provided value is divisible by 2, 3, 4, 5, 6, 9, and 10.

1) 365

3+6+5 = 14

~~2, 3, 4~~, (5), ~~6, 9, 10~~

2) 5,004

5+0+0+4 = 9

(2), (3), (4), ~~5~~, (6), (9), ~~10~~

¤ *Adding and Subtracting Fractions and Mixed Numbers*

Add or subtract.

3) $3\frac{7}{8} + 4\frac{2}{3} =$ $8\frac{13}{24}$

$3\frac{7}{8} = 3\frac{21}{24}$

$+ 4\frac{2}{3} = 4\frac{16}{24}$

$7\frac{37}{24}$

4) $11\frac{4}{15} - 4 =$ $7\frac{4}{15}$

$11\frac{4}{15}$

$- 4\frac{0}{15}$

5) $9 - 5\frac{6}{7} =$ $3\frac{1}{7}$

~~$8\frac{9}{7}$~~

$-5\frac{6}{7}$

6) $8\frac{1}{6} - \frac{5}{9} =$

$8\frac{1}{6} = 7\frac{3}{18} + \frac{18}{18} = 7\frac{21}{18}$

$-\frac{5}{9} = \frac{10}{18}$ $- \frac{10}{18}$

$7\frac{11}{18}$

7) $17\frac{1}{8} - 13\frac{5}{6} =$

$17\frac{1}{8} = 16\frac{3}{24} + \frac{24}{24} = 16\frac{27}{24}$

$-13\frac{5}{6} = 13\frac{20}{24}$ $-13\frac{20}{24}$

$3\frac{7}{24}$

¤ *Multiplying and Dividing with Fractions and Mixed Numbers (7-2 →7-4; 7-6 →7-8)*

Find the product. Write all answers in simplest form.

8) $9 \times 7\frac{1}{3}$ = 66

$\frac{9}{1} \times \frac{22}{3} = \frac{66}{1}$

9) $\frac{4}{7} \div 16$ = $\frac{1}{28}$

$\frac{4}{7} \times \frac{1}{16}$

10) $\frac{5}{14} \times \frac{7}{10} \times \frac{8}{9}$ = $\frac{2}{9}$

11) $\frac{3}{10} \div \frac{18}{25}$ = $\frac{5}{12}$

$\frac{3}{10} \times \frac{25}{18}$

12) $1\frac{5}{16} \times \frac{12}{35}$ = $\frac{9}{20}$

$\frac{21}{16} \times \frac{12}{35}$

13) $3\frac{1}{5} \div \frac{8}{25}$ = 10

$\frac{16}{5} \div \frac{8}{25}$

$\frac{16}{5} \times \frac{25}{8} = \frac{10}{1}$

14) $9 \div 7\frac{3}{4}$ = $\frac{36}{31}$

$\frac{9}{1} \div \frac{31}{4}$

$\frac{9}{1} \times \frac{4}{31} = \frac{36}{31}$

15) $10\frac{2}{3} \times 1\frac{1}{14}$ = $11\frac{3}{7}$

$\frac{32}{3} \times \frac{15}{14} = \frac{80}{7}$

16) $6\frac{2}{3} \div 2\frac{6}{7}$ = $2\frac{1}{3}$

$\frac{20}{3} \div \frac{20}{7}$

$\frac{20}{3} \times \frac{7}{20} = \frac{7}{3}$

For problems 17 - 19, provide the reciprocal of the number.

17) $\frac{6}{11}$ $\frac{11}{6}$ or $1\frac{5}{6}$

18) $\frac{1}{17}$ $\frac{17}{1}$ or 17

19) 9 $\frac{1}{9}$

20) A number multiplied by its reciprocal will always have a product of 1.

Provide an example below to prove your answer.

$\frac{4}{5} \times \frac{5}{4} = \frac{20}{20} = 1$

21) $\frac{5}{8} \times g = 1$ g = $\frac{8}{5}$ or $1\frac{3}{5}$

22) $6 \times k = 1$ k = $\frac{1}{6}$

$\frac{6}{1} \times \frac{1}{6} = \frac{6}{6} = 1$

Solve and label answers appropriately. Write all answers in simplest form!

23) Mrs. Galante took a poll to learn what season the majority of her students enjoyed. She found that $\frac{1}{5}$ of the students favor autumn, $\frac{1}{3}$ favor summer, $\frac{4}{15}$ favor spring, and the rest chose winter. What fraction of the class chose winter as their favorite season?

$\frac{1}{5} + \frac{1}{3} + \frac{4}{15} = \frac{3}{15} + \frac{5}{15} + \frac{4}{15} = \frac{12}{15} = \frac{4}{5}$

$1 - \frac{4}{5} = \frac{1}{5}$ prefer winter

24) Mrs. Hance is running errands after school today. She first needs to travel $4\frac{3}{10}$ miles to pick up her two adorable sons, then $6\frac{1}{5}$ miles to her favorite restaurant to pick up dinner, and finally drive home from the restaurant. She decides to track the mileage of her trip from school to home and discovers she traveled a total of $18\frac{1}{4}$ miles. How many miles did she travel from the restaurant back home?

$4\frac{3}{10} = 4\frac{3}{10}$

$+6\frac{1}{5} + 6\frac{2}{10}$

$10\frac{5}{10} = 10\frac{1}{2}$

$18\frac{1}{4} = 17\frac{1}{4} + \frac{4}{4} = 17\frac{5}{4}$

$-10\frac{1}{2} = 10\frac{2}{4}$ $\quad -10\frac{2}{4}$

$7\frac{3}{4}$ mi

25) You earn \$30 for tutoring Math for $\frac{3}{4}$ of an hour. What is your hourly rate of pay?

$30 \div \frac{3}{4} = \frac{30}{1} \times \frac{4}{3} =$ \$40 per hour

26) A restaurant manager wants to put 40 boxes of pasta on a shelf in the kitchen. Each box of pasta is $\frac{7}{8}$ of an inch wide. How wide must the shelf be to fit all the boxes on the one shelf?

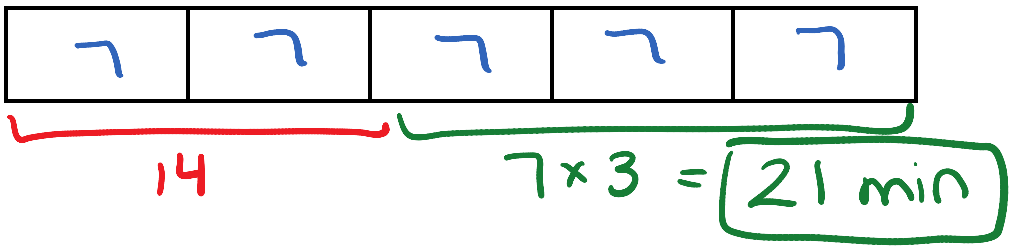
$\frac{7}{8} \times \frac{40}{1} = \frac{35}{1} =$ 35 inches wide

27) The famous painting has an area of $\frac{21}{50}$ square meters. If the length of the painting is $\frac{14}{15}$ of a meter, what is the width of the painting?

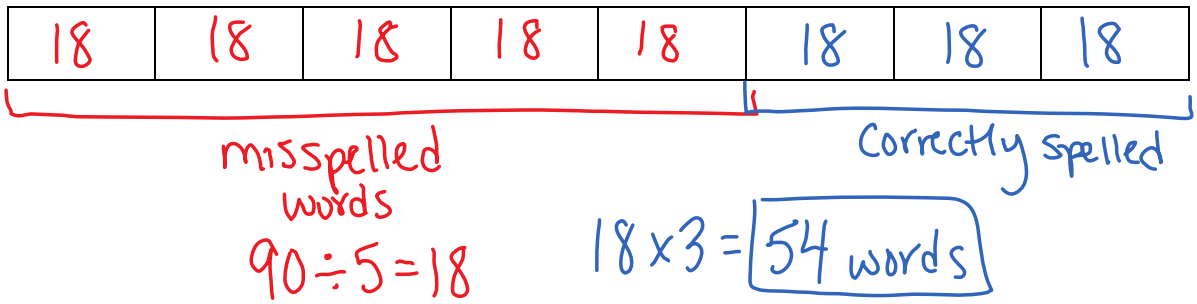
$\frac{21}{50} \div \frac{14}{15} = \frac{\cancel{21}^{3}}{\cancel{50}_{10}} \times \frac{\cancel{15}^{3}}{\cancel{14}_{2}} = \frac{9}{20}$ m

Use models and a bar diagram to solve the following problems.

28) Maniac Magee exercised last night, jogging part of the way and walking part of the way. If he spent 14 minutes walking, which was $\frac{2}{5}$ of the total time he spent exercising, how many minutes did he spend jogging?



29) In his essay for Mrs. Griffiths, Al Literation misspelled 90 words. If this was $\frac{5}{8}$ of all the words in the essay, how many words did Wayne spell correctly?



30) Of all the customers that went through McDonald's drive-thru on Friday, $\frac{1}{6}$ of them had ordered a Happy Meal. If 155 customers did not order a Happy Meal, how many customers went through McDonald's drive-thru on Friday?