

FRACTIONS UNIT TEST REVIEW

The Fraction Unit Test is scheduled for _____ Use this review to help you prepare for this assessment. Make sure you are familiar with the following vocabulary.

VOCABULARY: product, quotient, numerator, denominator, simplify, equivalent, least common denominator, mixed number, improper fraction, simplify factors, invert, reciprocal.

DIRECTIONS: FIRST FILL IN THE HINT BOXES TO HELP YOU BEGIN THINKING ABOUT EACH PROBLEM. THEN, ANSWER THE FOLLOWING QUESTIONS REFERRING TO YOUR CLASS NOTES, IF NEEDED.

PART I: COMPARING AND ORDERING FRACTIONS

Compare the following fractions using $<$, $>$, or $=$. Show your thinking.

1. $\frac{3}{6} = \frac{1}{2}$

2. $\frac{2}{9} < \frac{3}{10}$

3. $\frac{1}{2}, \frac{4}{5}, \frac{1}{10}, \frac{2}{5}, \frac{7}{10}$

$\frac{1}{10}, \frac{2}{5}, \frac{1}{2}, \frac{7}{10}, \frac{4}{5}$

Hint Box:

How do you compare fractions with the same denominator?

Look at the numerators

What do you need to do when comparing fractions with different denominators?

- 1) Find an LCD and rewrite the fractions with the same denominator
- 2) Change the fractions to decimal

PART II: EQUIVALENT FRACTIONS

Write an equivalent fraction.

4. $\frac{14}{21} \div \frac{7}{7} = \frac{2}{3}$

Write an equivalent fraction.

5. $7 \frac{17}{1} = \frac{14}{2} = \frac{21}{3}$

Hint Box:

What does equivalent mean?

Equal to

How can you write equivalent fractions (what operations must you use?)

X or \div

PART III: SIMPLIFYING FRACTIONS AND MIXED NUMBERS AND IMPROPER FRACTIONS

Simplify the following fraction.

6. $\frac{33}{72} \div 3 = \frac{11}{24}$

Change the following mixed number to an improper fraction.

7. $3\frac{6}{7} = \frac{27}{7}$

Change the following improper fraction to a mixed number.

8. $\frac{55}{8} = 6\frac{7}{8}$

Hint Box:

How do you know when a fraction is in simplest form?

The only factor that the numerator and denominator share is 1.

Hint Box:

How do you change a mixed number to an improper fraction?

MAD face
 $\times \left(2\frac{1}{3} = \frac{3 \times 2 + 1}{3} \right)$

How do you change an improper fraction to a mixed number?

Divide the numerator by the denominator and write the remainder as a fraction

PART IV: FRACTION MULTIPLICATION

Find the products or quotients.

9. $\frac{2}{8} \times \frac{19}{11} = \frac{19}{22}$

10. $\frac{8}{9} \times \frac{15}{6} = \frac{20}{9}$

Hint Box:

What are some words to describe multiplication?

Product of

What is the first step when multiplying mixed numbers?

Change to improper fractions

What is meant by simplifying factors and why do we do it?

Look for numbers on the numerator and denominator that share factors.

11. $3\frac{1}{3} \times 2\frac{7}{10}$

$\frac{10}{3} \times \frac{27}{10} = \frac{10 \times 27}{3 \times 10} = 9$

12. $\frac{11}{28} \times 8$

$\frac{11}{28} \times \frac{8}{1} = \frac{11 \times 8}{28 \times 1} = \frac{22}{7}$

PART V: FRACTION DIVISION

13. $\frac{2}{5} \div \frac{8}{25}$

$\frac{2}{5} \times \frac{25}{8} = \frac{5}{4}$

14. $6\frac{3}{4} \div 4\frac{1}{2}$

$\frac{27}{4} \div \frac{9}{2} = \frac{27}{4} \times \frac{2}{9} = \frac{3}{2}$

15. $\frac{3}{4} \div 12$

$\frac{3}{4} \times \frac{1}{12} = \frac{1}{16}$

16. $2\frac{4}{5} \div \frac{28}{40}$

$\frac{24}{5} \times \frac{40}{28} = \frac{16}{1} = 16$

17. $6 \div 1\frac{5}{16}$

$\frac{6}{1} \div \frac{21}{16} = \frac{6}{1} \times \frac{16}{21} = \frac{32}{7}$

18. $\frac{7}{12} \div 2\frac{5}{8}$

$\frac{7}{12} \div \frac{21}{8} = \frac{7}{12} \times \frac{8}{21} = \frac{2}{9}$

Hint Box:

What does KFC stand for? When do you use it?

Keep \downarrow for dividing fractions.
 Change
 Flip

What is the first step when dividing mixed numbers?

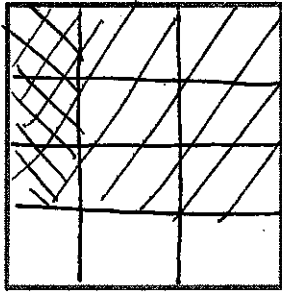
Change to improper fractions

PART V: MODELING MULTIPLICATION AND DIVISION

19. Anthony wants to buy $\frac{1}{3}$ of a pan of brownies that is $\frac{3}{4}$ full. What fraction of the whole pan does he buy?

a. Express this in a math sentence $\frac{1}{3} \times \frac{3}{4} = \frac{3}{12} = \frac{1}{4}$

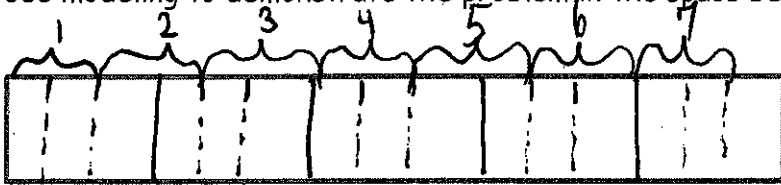
b. Use modeling to demonstrate your thinking. Use two different colors or patterns.



20. How many two-thirds are in 5?

a. Express this in a math sentence $5 \div \frac{2}{3} = 7\frac{1}{2}$

b. Use modeling to demonstrate the problem in the space below.



Hint Box:

Why is the product of

$\frac{4}{5}$ and $\frac{2}{3}$ less than $\frac{2}{3}$?

Because you're taking a piece of $\frac{2}{3}$ since $\frac{4}{5}$ is a fraction

Why is the quotient of 3 and $\frac{1}{2}$ larger than 3?

$3 \div \frac{1}{2} > 3$

Because the wholes each contain 2 halves

PART VII: MULTIPLICATION AND DIVISION OF FRACTIONS IN THE REAL WORLD

21. $\frac{1}{3}$ of the 96 markers in the box are black, and $\frac{1}{2}$ of them are red. The rest are blue.

a. How many markers are black?
 $\frac{1}{3} \times 96 = \frac{1}{3} \times \frac{96}{1} = 32$ are black

b. How many markers are red?
 $\frac{1}{2} \times 96 = \frac{1}{2} \times \frac{96}{1} = 48$ are red

c. How many markers are blue?
 $48 + 32 = 80$ $96 - 80 = 16$
 16 are blue

Hint Box:

What is the key word for multiplication?

of

How do you know when to use division?

You are asked to separate into groups

22. Mr. Mooney wants to sort boxes of envelopes into three equal piles for a math activity. He has $2\frac{1}{4}$ boxes of envelopes. How much of a box will be in each pile?

$$2\frac{1}{4} \div 3$$

$$3\frac{1}{4} \times \frac{1}{3} = \frac{3}{4}$$

$\frac{3}{4}$ of a box will be in each pile.

PART VIII: VOLUME

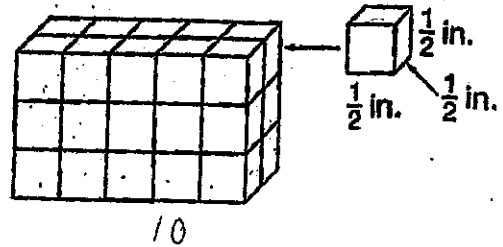
23. Find the volume of the figure to the right.

$$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} = \frac{1}{8} \text{ in}^3$$

30 cubes

$$15 \times \frac{1}{8} = \frac{15}{8}$$

15 $\frac{3}{4} = 3\frac{3}{4} \text{ in}^3$

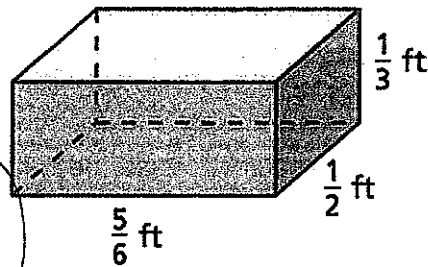


24. A box shown is packed with small $\frac{1}{6}$ -inch cubes.

How many cubes are in the box?

length = 5
width = $\frac{1}{2} \div \frac{1}{6} = 3$
height = $\frac{1}{3} \div \frac{1}{6} = 2$

Here are 30 cubes.



25. Determine the volume of the rectangular prism with the following dimensions.

length = $\frac{8}{15}$ in. width = $2\frac{1}{4}$ in. height = $\frac{7}{12}$ in.

$\frac{8}{15} \times 2\frac{1}{4} \times \frac{7}{12} = \frac{14}{10} = 1\frac{4}{10}$

Volume is $1\frac{4}{10} \text{ in}^3$

Hint Box:

What is the volume formula?

$V = lwh$

Is it possible to use the simplifying factors method when multiplying more than 2 fractions? Yes!