

Multiplying and Dividing Fractions Review

Name: Key

Date: _____

1. Define reciprocal.

A flipped fraction.

2. Dividing by a number and multiplying by its reciprocal will yield the same answer.

- D 3. $\frac{1}{4}$ of Trevor's dresser is full of T-shirts. $\frac{3}{8}$ of the T-shirts are black. Which expression represents the fraction of the dresser that is filled with black T-shirts?

A. $\frac{1}{4} + \frac{3}{8}$ B. $\frac{3}{8} \div \frac{1}{4}$ C. $\frac{1}{4} \div \frac{3}{8}$ D. $\frac{1}{4} \times \frac{3}{8}$

- D 4. Simplify: $3 \div 1\frac{1}{3}$

A. $\frac{4}{9}$ B. 4 C. $1\frac{1}{3}$ D. $2\frac{1}{4}$

$$3 \div \frac{4}{3} = \frac{3}{1} \cdot \frac{3}{4} = \frac{9}{4} = 2\frac{1}{4}$$

- C 5. Terry is making a batch of cookies. The recipe calls for $\frac{1}{3}$ cup of water. If she cuts the recipe in half, how much water is needed?

A. 1 cup B. $\frac{1}{4}$ cup C. $\frac{1}{6}$ cup D. $\frac{1}{9}$ cup

$$\frac{1}{3} \div 2 \quad \text{or} \quad \frac{1}{3} \cdot \frac{1}{2}$$

- B 6. Simplify: $\frac{4}{9} \cdot \frac{3}{7} \cdot \frac{3}{8}$

A. $\frac{5}{28}$ B. $\frac{1}{14}$ C. $\frac{1}{4}$ D. $\frac{2}{7}$

$$\frac{\textcircled{4}}{\textcircled{9}} \cdot \frac{\textcircled{3}}{7} \cdot \frac{\textcircled{3}}{\textcircled{8}} = \frac{1 \cdot 1 \cdot 1}{1 \cdot 7 \cdot 2} = \frac{1}{14}$$

- A 7. Mario was about $\frac{2}{5}$ of the way through a bag of peanuts when he decided to split the rest with a friend. About how much of the bag of peanuts did Mario's friend get? ignore

* Change A to $\frac{3}{10}$.

A. $\frac{3}{10}$ B. $\frac{1}{7}$ C. $\frac{6}{5}$ D. $\frac{1}{3}$

* Actual answer is D. $\frac{1}{3}$, because it is closest to the exact answer of $\frac{3}{10}$. We changed A to reflect the exact answer. Don't worry... there won't be one on the test like this.

$$\frac{3}{5} \div 2 = \frac{3}{5} \cdot \frac{1}{2} = \frac{3}{10}$$

- B 8. Derek is making hot fudge sauce using the recipe shown below.

Hot Fudge Sauce

- 12 ounces of chocolate chips
- $\frac{3}{4}$ cup of heavy cream
- 1 tablespoon of butter

If Derek is going to double the recipe, how many cups of heavy cream will he need?

A. $2\frac{3}{4}$ B. $1\frac{1}{2}$ C. $1\frac{1}{4}$ D. $\frac{3}{8}$

$$\frac{3}{4} \cdot \frac{\textcircled{2}}{1} = \frac{3}{2} = 1\frac{1}{2}$$

D 9. Simplify: $3\frac{1}{2} \cdot 2\frac{1}{4} = \frac{7}{2} \cdot \frac{9}{4}$

- A. $1\frac{1}{2}$ B. $5\frac{3}{4}$ C. $6\frac{1}{8}$ D. $7\frac{7}{8}$

$\frac{7}{2} \cdot \frac{9}{4} = \frac{63}{8} = 7\frac{7}{8}$

C 10. $\frac{9}{3} \div 7 =$

- A. $\frac{2}{3}$ B. $\frac{9}{10}$ C. $\frac{9}{21}$ D. 21

$\frac{9}{3} \div \frac{7}{1} = \frac{9}{3} \cdot \frac{1}{7} = \frac{9}{21}$
K C F

- A 11. A park has a grassy section that covers $2\frac{1}{3}$ acres. Denny mowed half the grassy section.

What is the number of acres that Denny mowed?

- A. $1\frac{1}{6}$ B. $1\frac{1}{3}$ C. $1\frac{2}{3}$ D. $1\frac{5}{6}$

$2\frac{1}{3} \cdot \frac{1}{2} = \frac{7}{3} \cdot \frac{1}{2} = \frac{7}{6} = 1\frac{1}{6}$

- B 12. John runs $\frac{3}{10}$ mile every day. How many miles does he run in 30 days?

- A. 18 B. 24 C. 30 D. 38

$\frac{3}{10} \cdot 30 = \frac{3 \cdot 30}{10} = \frac{90}{10} = 9$

D 13. Find the quotient: $4\frac{2}{5} \div \frac{7}{10} =$

- A. $\frac{34}{7}$ B. $\frac{5}{22}$ C. $5\frac{3}{35}$ D. $6\frac{2}{7}$

$4\frac{2}{5} \div \frac{7}{10} = \frac{22}{5} \div \frac{7}{10} = \frac{22}{5} \cdot \frac{10}{7} = \frac{22 \cdot 2}{1 \cdot 7} = \frac{44}{7} = 6\frac{2}{7}$
K C F

$\frac{22 \cdot 2}{1 \cdot 7} = \frac{44}{7} = 6\frac{2}{7}$

- A 14. How many halves are in $3\frac{1}{4}$?

- A. $6\frac{1}{2}$ B. $12\frac{1}{4}$ C. $1\frac{1}{2}$ D. $6\frac{3}{4}$

$3\frac{1}{4} \div \frac{1}{2} = \frac{13}{4} \div \frac{1}{2} = \frac{13}{4} \cdot \frac{2}{1} = \frac{13 \cdot 2}{4 \cdot 1} = \frac{26}{4} = 6\frac{1}{2}$

- C 15. Find the quotient of $\frac{3}{4}$ and $\frac{5}{10}$.

- A. $\frac{1}{4}$ B. $\frac{15}{40}$ C. $1\frac{1}{2}$ D. $1\frac{1}{5}$

$\frac{3}{4} \div \frac{5}{10} = \frac{3}{4} \cdot \frac{10}{5} = \frac{3 \cdot 10}{4 \cdot 5} = \frac{30}{20} = \frac{3 \cdot 2}{2 \cdot 10} = \frac{3}{10} = 1\frac{1}{5}$

- A 16. A \$48.00 sweater is on sale for $\frac{1}{3}$ off. How much money does the customer save if he buys the sweater?

- A. \$16 B. \$32 C. \$33 D. \$33.60

$48 \cdot \frac{1}{3} = \frac{48 \cdot 1}{3} = \frac{48}{3} = 16$

- C 17. A carpenter bought 80 feet of lumber. He cut it into $\frac{4}{5}$ foot long pieces. How many pieces of lumber did he cut?

- A. 64 B. 80 C. 100 D. 400

$80 \div \frac{4}{5} = \frac{80}{1} \cdot \frac{5}{4} = \frac{80 \cdot 5}{1 \cdot 4} = \frac{400}{4} = 100$

C

18. A piece is cut from a 50-foot long metal rod. If the piece has a length equal to $\frac{1}{4}$ of the length of the original rod, how long is the rod now?

- A. 30 ft B. 32.5 ft C. 37.5 ft D. 40 ft

$50 - \frac{1}{4} \cdot 50 = 50 - 12.5 = 37.5$

D

19. How many groups of $\frac{3}{4}$ are there in $2\frac{3}{4}$?

- A. $1\frac{1}{8}$ B. $2\frac{1}{8}$ C. $2\frac{3}{4}$ D. $3\frac{1}{2}$

$2\frac{3}{4} \div \frac{3}{4} = \frac{11}{4} \div \frac{3}{4} = \frac{11}{4} \cdot \frac{4}{3} = \frac{11}{3} = 3\frac{2}{3}$

20. Which expression could be used to solve the following problem?

Kim is cutting ribbon to make bows. Each bow requires $\frac{1}{4}$ yd of ribbon. If Kim has $3\frac{1}{2}$ yd of ribbon, how many bows can she make?

- A. $\frac{7}{2} \div \frac{1}{4}$ B. $\frac{1}{4} \div 3\frac{1}{2}$ C. $\frac{7}{2} \cdot \frac{1}{4}$ D. $\frac{1}{4} \cdot 3\frac{1}{2}$

$3\frac{1}{2} \div \frac{1}{4} = \frac{7}{2} \div \frac{1}{4} = \frac{7}{2} \cdot \frac{4}{1} = 14$

C

21. $\frac{1}{4} \div \frac{1}{2}$

- A. $\frac{1}{8}$ B. $\frac{1}{6}$ C. $\frac{1}{2}$ D. 2

$\frac{1}{4} \div \frac{1}{2} = \frac{1}{4} \cdot \frac{2}{1} = \frac{2}{4} = \frac{1}{2}$

- A 22. Mrs. Olcott has $\frac{7}{8}$ gallon of paint. If she needs $\frac{3}{4}$ gallon of paint for each chair, how many chairs can she paint?

- A. $1\frac{1}{2}$ B. $1\frac{3}{24}$ C. $1\frac{9}{12}$ D. $\frac{3}{8}$

$\frac{7}{8} \div \frac{3}{4} = \frac{7}{8} \cdot \frac{4}{3} = \frac{7 \cdot 4}{8 \cdot 3} = \frac{28}{24} = 1\frac{1}{6}$

- A 23. Simplify: $\frac{1}{4} \cdot \frac{2}{3}$

- A. $\frac{1}{6}$ B. $\frac{3}{7}$ C. $\frac{3}{8}$ D. $\frac{3}{8}$

$\frac{1}{4} \cdot \frac{2}{3} = \frac{1 \cdot 2}{4 \cdot 3} = \frac{2}{12} = \frac{1}{6}$

- A 24. Simplify: $6\frac{1}{8} \div 3\frac{1}{2} =$

- A. $1\frac{1}{2}$ B. $2\frac{1}{4}$ C. $2\frac{5}{8}$ D. $3\frac{1}{8}$

$6\frac{1}{8} \div 3\frac{1}{2} = \frac{49}{8} \div \frac{7}{2} = \frac{49}{8} \cdot \frac{2}{7} = \frac{49 \cdot 2}{8 \cdot 7} = \frac{98}{56} = 1\frac{3}{4}$

A 25. $16 \div \frac{8}{10} = \frac{16}{1} \div \frac{8}{10}$

- A. 20 B. $\frac{20}{8}$ C. 10 D. $\frac{26}{8}$

$16 \div \frac{8}{10} = \frac{16}{1} \cdot \frac{10}{8} = \frac{16 \cdot 10}{1 \cdot 8} = \frac{160}{8} = 20$

- O 26. Dominique bought $7\frac{1}{2}$ pounds of peanuts at \$4.00 per pound. How much should she have paid?

- A. \$11.00 B. \$27.50 C. \$28.00 D. \$30.00

$7\frac{1}{2} \cdot 4 = \frac{15}{2} \cdot 4 = \frac{15 \cdot 4}{2 \cdot 1} = \frac{60}{2} = 30$