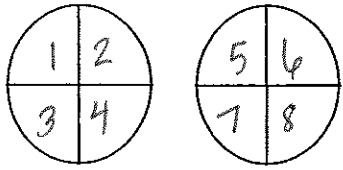


Dividing Fractions



Cut two circles into four equal pieces to show $2 \div \frac{1}{4}$.

How many $\frac{1}{4}$'s are in 2 whole circles? What is $2 \div \frac{1}{4}$? 8

How would you model $3 \div \frac{1}{2}$?



What is $3 \div \frac{1}{2}$? 6

What is true about $3 \div \frac{1}{2}$ and 3×2 ?

They are the SAME. Dividing by $\frac{1}{2}$ is the same as multiplying by 2.

To divide fractions, multiply by the multiplicative inverse or the reciprocal.

Keep it \rightarrow change it \rightarrow flip it!!

$$\frac{7}{8} \div \frac{3}{4} = \frac{7}{8} \times \frac{4}{3} = \frac{7}{6} = \boxed{\frac{1}{6}}$$

$$\frac{3}{4} \div \frac{1}{2} = \frac{3}{4} \times \frac{2}{1} = \frac{3}{2} = \frac{3}{5} \div \frac{7}{10} = \frac{3}{5} \times \frac{10}{7} = \frac{6}{7} = \boxed{\frac{6}{7}}$$

- Keep the first fraction.
- change the sign to "x"
- flip the second fraction.

$$\frac{4}{5} \div \frac{8}{9} = \frac{4}{5} \times \frac{9}{8} = \frac{9}{10} = \boxed{\frac{9}{10}}$$

$$\frac{5}{6} \div \frac{2}{3} = \frac{5}{6} \times \frac{3}{2} = \frac{5}{4} = \boxed{\frac{1}{4}}$$

$$\frac{9}{14} \div \frac{3}{7} = \frac{9}{14} \times \frac{7}{3} = \frac{3}{2} = \boxed{\frac{1}{2}}$$

* MUST convert to improper!! \rightarrow emv!!

$$12 \div 1\frac{1}{2} = \frac{3}{2}$$

$$3\frac{1}{8} \div 1\frac{1}{5}$$

$$2\frac{1}{3} \div \frac{5}{7}$$

ops $\frac{4}{1} \times \frac{2}{3} = \frac{8}{3} = \boxed{8}$

$$\frac{25}{8} \div \frac{6}{5} = \frac{25}{8} \times \frac{5}{6} = \frac{125}{48} = \boxed{\frac{29}{48}}$$

$$\frac{7}{3} \times \frac{1}{5} = \frac{7}{15} = \boxed{\frac{7}{15}}$$

$$\frac{3}{2} - 1\frac{1}{2} \div 12 = \frac{12}{1}$$

$$\frac{6}{5} - 1\frac{1}{5} \div 3\frac{1}{8} = \frac{25}{8}$$

$$5 \div 2\frac{1}{3} = \frac{7}{3}$$

$$\frac{3}{2} \times \frac{1}{12} = \frac{1}{6} = \boxed{\frac{1}{6}}$$

$$\frac{6}{5} \times \frac{8}{25} = \frac{48}{125} = \boxed{\frac{48}{125}}$$

$$\frac{5}{1} \times \frac{3}{7} = \frac{15}{7} = \boxed{\frac{21}{7}}$$

Multiplying and Dividing Word Problems

1. Each DVD storage case is about $\frac{1}{5}$ inch thick. What will be the height of 12 cases sold together in plastic wrapping? *given the wst of 1 - find the cost of many.*

$$\frac{1}{5} \times \frac{12}{1} = \frac{12}{5} = \boxed{2\frac{2}{5}}$$

2. The width of a vegetable garden is $\frac{1}{3}$ times its length. If the length of the garden is $7\frac{3}{4}$ feet, what is the width?

$$7\frac{3}{4} \times \frac{1}{3} = \frac{31}{4} \times \frac{1}{3} = \frac{31}{12} = \boxed{2\frac{7}{12}}$$

3. A recipe to make one batch of blueberry muffins calls for $4\frac{2}{3}$ cups of flour. How many cups of flour are needed to make 3 batches of blueberry muffins?

$$4\frac{2}{3} \times \frac{3}{1} = \frac{14}{3} \times \frac{3}{1} = \frac{14}{1} = \boxed{14}$$

4. $5\frac{1}{4}$ pounds of cashews will be divided into $\frac{3}{4}$ pound bags. How many bags can be made?

$$\frac{21}{4} = \frac{51}{4} \div \frac{3}{4} \quad \frac{781}{14} \times \frac{4}{3} = \frac{7}{1} = \boxed{7}$$

5. Suppose a small box of cereal contains $12\frac{2}{3}$ cups of cereal. How many $1\frac{1}{3}$ cup servings are in the box?

how many $\frac{1}{3}$ servings can the box be split up into? DIVISION

$$12\frac{2}{3} \div 1\frac{1}{3} = \frac{38}{3} \times \frac{3}{5} = \frac{38}{5} = \boxed{7\frac{3}{5}}$$

6. Damon has a 15 yard spoon of fabric. He wants to make bookmarks that are $10\frac{1}{2}$ inches long. How many book marks can he make? ****Hint there are 12 inches in a foot and 3 feet in a yard.**

$$15 \times 36 = \frac{540}{1} \div \frac{21}{2} = \frac{180}{1} \times \frac{2}{21} = \frac{360}{7} = \boxed{51\frac{3}{7}}$$

7. On Saturday, Lindsay walked $3\frac{1}{2}$ miles in $1\frac{2}{5}$ hours. What was her walking pace in miles per hour.

$$3\frac{1}{2} \div 1\frac{2}{5}$$

$$\frac{17}{2} \times \frac{5}{7} = \frac{5}{2} = \boxed{2\frac{1}{2} \text{ mph}}$$