

FINDING THE LCM AND GCF

LCM → **Least Common Multiple**
GCF → **Greatest Common Factor**

LCM is the smallest multiple that two or more numbers share.

	2	3	4	5	6	
4	8	12	16	20	24	The LCM is 20 here
10	20	30	40	50	60	

GCF is the greatest factor that two or more numbers share.

4's factors are 1, 2, 4

10's factors are 1,2,5,10 The GCF here is 2.

How to find the GCF and LCM

1. Divide out the numbers they have in common.

18	24	2
9	12	3
3	4	

GCF= The product of the common factors= $2 \cdot 3 = 6$

LCM= All of the outside numbers = $3 \cdot 4 \cdot 3 \cdot 2 = 72$

100	40	

GCF= The product of the common factors= _____ =

LCM= All of the outside numbers = _____ =

This method works all the time with two numbers. It will not work all the time with more than two numbers you will have to think. Find the GCF and LCM for the following:

1) 18 8

2) 36 64

3) 18 45

4) 9 7

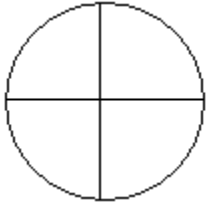
Fractions

2
—
3

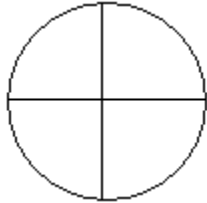
2 thirds
2 out of 3
2 over 3
2 divided by 3

Proper fraction	Improper fraction

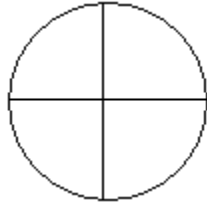
$\frac{1}{4}$



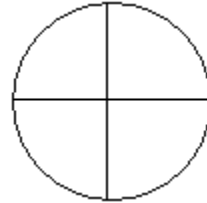
$\frac{2}{4}$



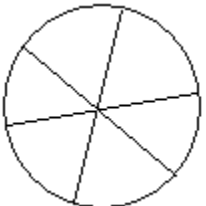
$\frac{3}{4}$



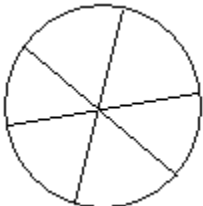
$\frac{4}{4}$



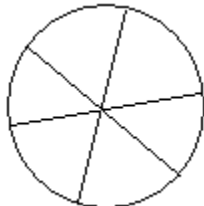
$\frac{1}{6}$



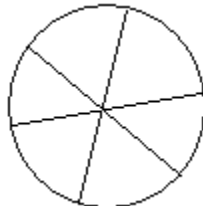
$\frac{2}{6}$



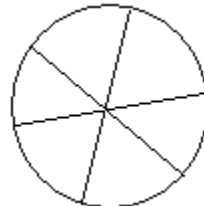
$\frac{3}{6}$



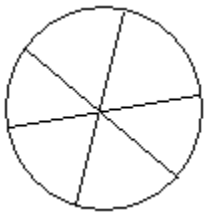
$\frac{4}{6}$



$\frac{5}{6}$

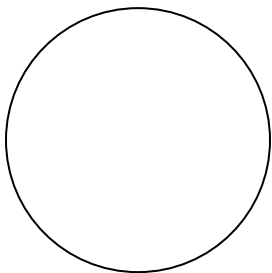


$\frac{6}{6}$

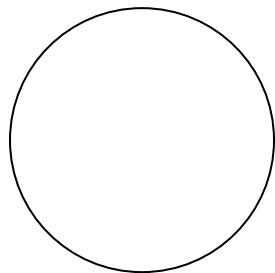


Accurately shade the following:

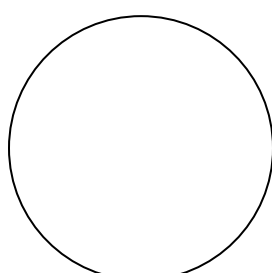
$\frac{1}{2}$



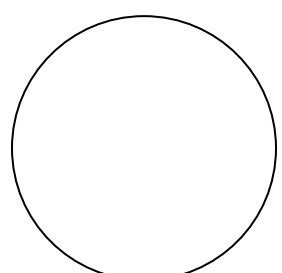
$\frac{2}{4}$



$\frac{3}{6}$



$\frac{4}{8}$

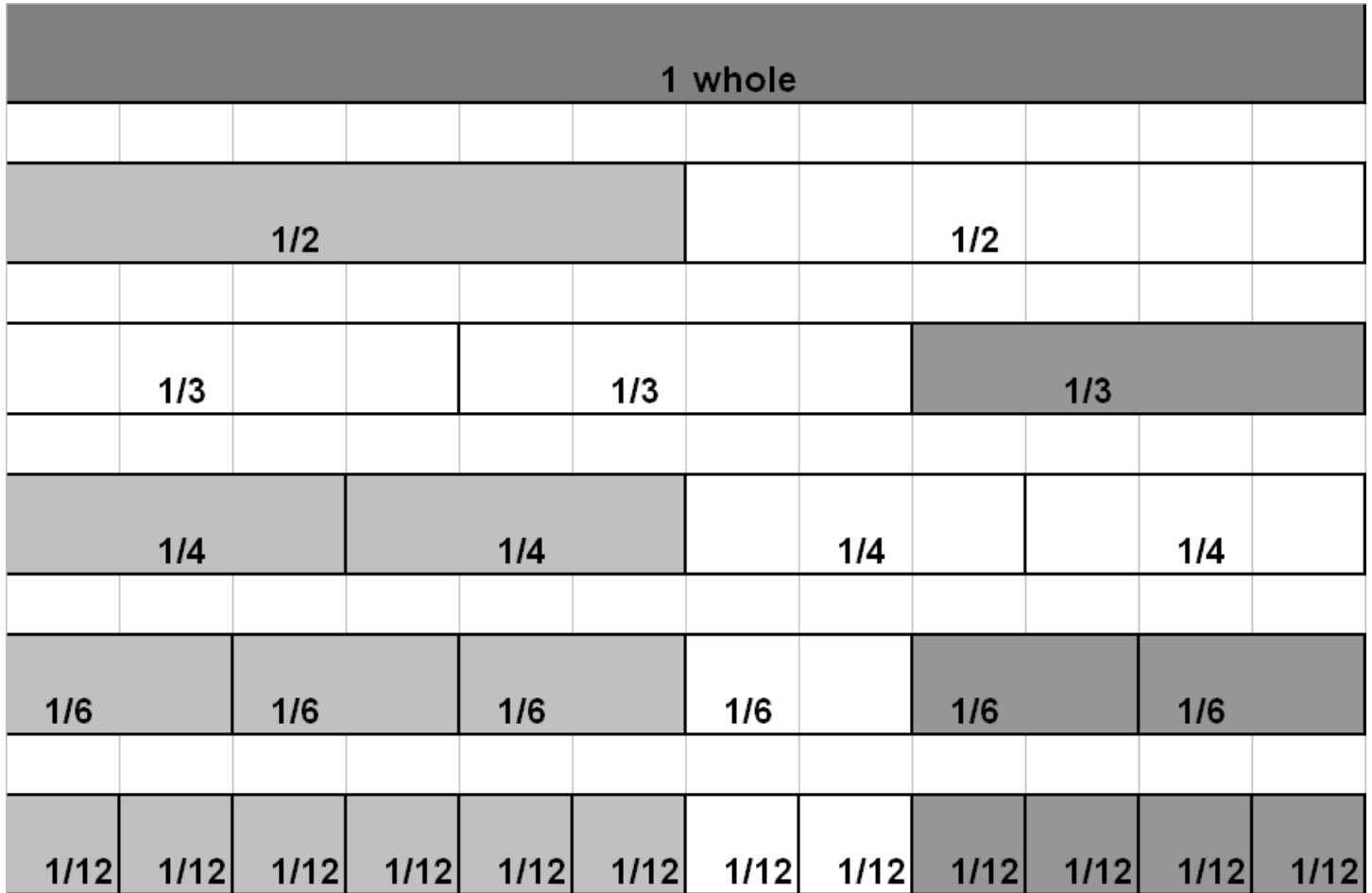


We call the previous fractions _____.

$$\frac{2}{2} = \frac{3}{3} = \frac{4}{4} = \frac{5}{5} =$$

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

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



1) find $\frac{15}{8}$ inches, $\frac{1}{4}$ inches, $\frac{4}{16}$ inches, $\frac{20}{16}$ inches, $\frac{7}{2}$ inches



3 person group warm up.

1) Which fraction represents the shaded bar the best?



a) $\frac{5}{6}$

b) $\frac{2}{15}$

c) $\frac{2}{5}$

2) Which fraction represents the shaded bar the best?



a) $\frac{3}{7}$

b) $\frac{11}{13}$

c) $\frac{3}{19}$

3) Find the matching equivalent fractions.

a) $\frac{2}{5} = \frac{\quad}{10}$

b) $\frac{6}{7} = \frac{36}{\quad}$

c) $\frac{10}{35} = \frac{\quad}{7}$

4) Find three equivalent fractions for $\frac{3}{8}$.

5) Find three equivalent fractions for $\frac{24}{36}$.

6) Circle the fractions that are equivalent to $\frac{2}{5}$.

$\frac{6}{12}$

$\frac{18}{40}$

$\frac{14}{35}$

7) Costco slices it's pizza in to 6 slices. Each slice is to large for a normal person to consume.

a) What fractional size is each slice?

b) If you purchased a **6 slice pizza**, then each slice is _____. If you ask for a knife and start slicing the pizza again into equal size slices, then name two more fractional size slices you could create with your plastic knife.

8) Waste paper basket game. Step 1: make notebook paper basketballs. Step 2: Player one gets two shots. Player two gets three shots. Player three gets six shots. Step 3: Shoot baskets and record how many each player makes. Who performed the best?

9) place the correct symbol, < or >, between the two numbers.

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

Reducing fractions

$$\frac{24}{60}$$

$$\frac{24x^2}{60x^3}$$

$$\frac{24x^2}{60x^3} = \text{_____}$$

$\frac{24x^2}{60x^3}$ and $\frac{2}{5x}$ are called **equivalent** fractions. $\frac{2}{5x}$ is the **reduced** form

$$\frac{-102x w}{12x^2 y}$$

A ton is equal to 2,000 lb. What fractional part of a ton is 250 lb?

If a history class lasts 50 min, what fractional part of an hour is the history class?

Of the 88 keys on a piano 36 are black. What fraction of the keys are not black?

You answered 42 questions correctly on an exam of 50 questions. Did you answer more or less than $\frac{8}{10}$ of the questions correctly?

An American ruler is divided into inch, $\frac{1}{2}$ inch, $\frac{1}{4}$ inch, $\frac{1}{8}$ inch, and $\frac{1}{16}$ inch increments. Find the other equivalent measurements on the ruler for $\frac{3}{4}$ of an inch?

Mixed Numbers

unreduced		
$1/4$		one fourth
$2/4$		two fourths
$3/4$		three fourths
$4/4$	1	four fourths = one
$5/4$	1 and $1/4$	one and one fourth
$6/4$	1 and $2/4$	one and two fourths
$7/4$	1 $3/4$	one and three fourths
$8/4$	2	two
$9/4$	2 $1/4$	two and one fourth
$10/4$	2 $2/4$	two and two fourths
$11/4$	2 $3/4$	two and three fourths
$12/4$	3	three

Label Improper or Proper	Graph
$\frac{1}{3}$	
$\frac{2}{3}$	
$\frac{5}{3}$	
$\frac{8}{3}$	
$\frac{1}{4}$	
$\frac{3}{4}$	
$\frac{7}{4}$	
$\frac{11}{5}$	

$$\longrightarrow 1\frac{2}{5} \longleftarrow$$

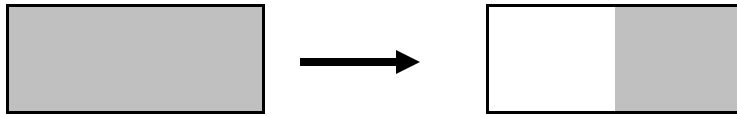
Improper to mixed

$$\frac{7}{5} \xrightarrow{\text{divide}} 5 \overline{)7} \longrightarrow$$

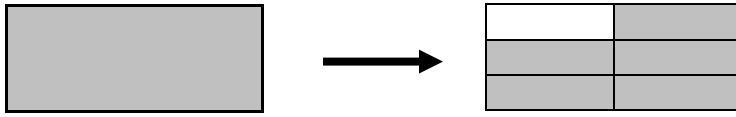
Mixed to improper

$$1\frac{2}{5} \longrightarrow 1\frac{2}{5} \longrightarrow \frac{5 \cdot 1 + 2}{5} \longrightarrow$$

$\frac{1}{2}$ of



$\frac{5}{6}$



$\frac{1}{2}$



$\frac{3}{4}$



MULTIPLYING FRACTIONS

1. Reduce (cancel top to bottom)

$$\frac{3}{8} \left(-\frac{4}{6} \right) =$$

2. Multiply

$$\frac{3}{8} \left(-\frac{4}{6} \right) =$$

1. Reduce (cancel top to bottom)

$$\frac{3}{8y^3} \cdot \frac{x}{6} \cdot \frac{14}{x^5} \cdot \frac{5y^6}{7} =$$

2. Multiply

$$\frac{3}{8y^3} \cdot \frac{x}{6} \cdot \frac{14}{x^5} \cdot \frac{5y^6}{7} =$$

4) $\frac{3}{5} \cdot 2$

5) $3 \cdot \frac{2}{3}$

6) $-\frac{y}{6} \cdot 8$

7) $\frac{3}{5} \cdot y$

8) $\left(\frac{-2b}{2}\right)^2$

Multiplying with mixed numbers $3\frac{1}{7} \left(\frac{14}{3}\right)$

$$3\frac{1}{7} = \frac{7 \cdot 3 + 1}{7} = \frac{22}{7}$$

1. Convert all Mixed numbers to improper fractions

2. Reduce (cancel top to bottom) _____ · _____

3. Multiply

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

$$3\left(1\frac{1}{5}\right)$$

DIVIDING FRACTIONS

1. Flip the divisor (the second number) and change the sign to multiply.

$$\frac{3}{8} \div \frac{6}{4} =$$

2. Multiply the fractions as in **MULTIPLYING FRACTIONS**.

$$6 \div 3 = 2$$

$$4 \div \frac{1}{2} = 8$$

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

Try $3 \div \frac{1}{4}$ without performing the operation.

Now perform the operations::

It takes $\frac{2}{3}$ of a pizza to feed one person. How many people will 4 pizzas feed?

It takes $\frac{6}{9}$ pounds of mud to fill the belly of a 4 year old. How many 4 year old bellys can 12 pounds of mud fill?

If $\frac{2}{3}$ of the 30 students in this class love math, then how many students in this class love math..

Dividing with mixed numbers $3\frac{1}{7} \div \left(\frac{3}{14}\right)$

$$3\frac{+1}{\cdot 7} = \frac{7 \cdot 3 + 1}{7} = \frac{22}{7}$$

1. Convert all Mixed numbers to improper fractions

2. Flip the divisor (the second number) and change the sign to multiply. _____ \div _____

2. Reduce (cancel top to bottom) _____ \cdot _____

3. Multiply

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

b) $1\frac{2}{3} \div 6$

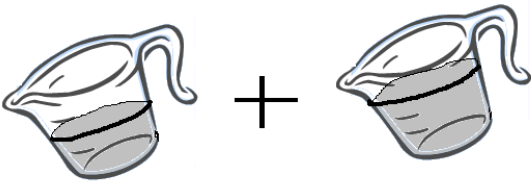
- 1) Create like terms using the fraction rectangles.
- 2) Write down the new equivalent fractions.
- 3) Add/subtract and write down the answer.

$$\frac{1}{2} + \frac{1}{4}$$

$$\frac{1}{3} + \frac{1}{6}$$

$$\frac{1}{12} + \frac{2}{3}$$

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



After a party there are 3 cartons of pizza left. In one carton there is $\frac{1}{3}$ of a pizza left. In the second carton there is $\frac{1}{6}$ of a pizza left. In the third carton there is $\frac{5}{12}$ of a pizza left. What fraction of a pizza is left?

Jimbo decides to make a coat for his pet monkey. He buys 1 linear yard of fabric. He cuts $\frac{1}{6}$ of a yard for **each** sleeve. He then cuts $\frac{1}{4}$ for the front of the coat and $\frac{1}{4}$ for the rear of the coat. How much fabric does he have left after all 4 cuts?

3 apples plus 5 apples is 8 apples.

$$3 \text{ 🍏} + 5 \text{ 🍏} = 8 \text{ 🍏}$$

1 fifth plus 2 fifths is 3 fifths

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

$$\frac{5}{7} - \frac{4}{7} =$$

a) $\frac{3}{5} + \frac{7}{5}$

b) $\frac{5}{2} - \frac{3}{2}$

c) $\frac{4x}{15} + \frac{8}{15}$

d) $\frac{6}{7} - \frac{3y}{7}$

4 apples plus 2 pears is not 6 apples

$$4 \text{ 🍏} + 2 \text{ 🍐} \neq 6 \text{ ?}$$

3 fifths plus 2 eighths is not 5 fiegths

$$\frac{3}{5} + \frac{2}{8} \neq \frac{5}{?}$$

Adding fractions you need a common denominator (a like term)

ADDING AND SUBTRACTING FRACTIONS WITH DIFFERENT DENOMINATORS

$$\begin{array}{r} -\frac{5}{6} \\ + \frac{2}{3} \\ \hline \end{array} + \begin{array}{|c|c|c|c|c|c|} \hline & & & & & & \\ \hline \end{array} + \begin{array}{|c|c|c|} \hline & & & \\ \hline \end{array}$$

a. Find the LCD

$$\begin{array}{|c|c|} \hline 6 & 3 \\ \hline \end{array}$$

LCD= _____ = _____

b. Convert the denominators into the LCD by multiplying each fraction by 1 as follow.(enlarge the fractions)

$$-\frac{5}{6} \cdot \frac{\quad}{\quad} = \frac{\quad}{\quad}$$

$$-\frac{5}{6} \cdot \frac{\quad}{\quad} + \frac{2}{3} \cdot \frac{\quad}{\quad} =$$

or

$$+\frac{2}{3} \cdot \frac{\quad}{\quad} = \frac{\quad}{\quad}$$

$$\frac{\quad}{\quad} + \frac{\quad}{\quad} =$$

c. Reduce the answer if possible.

Adding and subtracting Mixed numbers

3 apples plus 5 apples is 8 apples

$$3 \text{ 🍏} + 5 \text{ 🍏} = 8 \text{ 🍏}$$

1 fifth plus 2 fifths is _____fifths

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

$$\begin{array}{r} 1\frac{2}{5} \\ + 3\frac{4}{5} \\ \hline \end{array}$$

$$\begin{array}{r} 7\frac{2}{5} \\ - 3\frac{1}{5} \\ \hline \end{array}$$

$$\begin{array}{r} 1 \\ + 3\frac{4}{5} \\ \hline \end{array}$$

$$\begin{array}{r} 5\frac{2}{3} \\ + 3\frac{4}{5} \\ \hline \end{array}$$

Borrowing

$$\begin{array}{r} 5\frac{1}{3} \\ - 3\frac{2}{3} \\ \hline \end{array}$$

$$\begin{array}{r} 5\frac{3}{8} \\ - 3\frac{3}{4} \\ \hline \end{array}$$

Special

$$-3\frac{2}{3} + \left(-1\frac{4}{5}\right)$$

Solving Equations

S-S-D

We want to know what x is for the equation to be true

We have to find **x** =

Simplify

Separate

Divide

$$\frac{3x}{10} = 7$$

$$\frac{-1}{5} + x = \frac{4}{3}$$

Separate

(x's on one side, non x's on the other)

(add and subtract)

Divide

(Divide by the number in front of the variable)

Try:

a) $\frac{3h}{5} = -2$

b) $\frac{2}{3} + y = \frac{4}{3}$

c) $\frac{3}{5}x = \frac{1}{3}$

d) $\frac{2y}{15} = 0$

