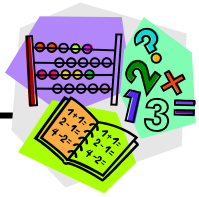
Comparing and Converting Fractions and Mixed Numbers



- When comparing fractions with the same denominator, the size of the numerator indicates the size of the fraction.

Examples

A) $\frac{3}{4}$ > (is greater than) $\frac{1}{4}$

B) $\frac{4}{5} > \frac{2}{5}$

- When comparing mixed numbers, the greater the whole number, the greater the mixed fraction. If the whole numbers are the same, compare the fraction.

Examples

A) $3\frac{3}{8}$ > (is greater than) $2\frac{7}{8}$

B) $5\frac{1}{6} > 4\frac{5}{6}$

C) $5\frac{5}{6} > 5\frac{3}{6}$

- When comparing a mixed number and an improper fraction with the same denominators, you will need to convert the mixed number to an improper fraction, or convert the improper fraction to a mixed number.

Example

$\frac{29}{8} > 3\frac{3}{8}$ because $\frac{29}{8} = 3\frac{5}{8}$

To convert improper fractions and mixed numbers, use the process on the next page.

Converting Mixed Numbers into Improper Fractions

Example Convert the mixed number $4\frac{1}{3}$ into an improper fraction.

Process	Illustration
Multiply the denominator by the whole number.	$3 \times 4 = 12$
Add the numerator to the answer.	$12 + 1 = 13$
This answer is the numerator.	$\frac{13}{?}$
Keep the same denominator.	$\frac{13}{3}$

$4\frac{1}{3} = \frac{13}{3}$ (thirteen thirds)

Converting Improper Fractions into Mixed Numbers

Example Convert the improper fraction $\frac{17}{4}$ into a mixed number.

Process	Illustration
Divide the denominator into the numerator. This answer becomes the whole number.	4 goes into 17 → 4 times 4 r1 4 17 –16 1
The remainder becomes the numerator.	1/?
The denominator remains the same.	$4\frac{1}{4}$

$\frac{17}{4} = 4\frac{1}{4}$ (4 and one fourth or 4 and one quarter)

Converting fractions using diagrams

Example

If there are $3\frac{2}{6}$ pies left over, how many people could get a piece the size of $\frac{1}{6}$ of a pie?

Solution: Convert mixed numbers to improper fractions.

In the circles above:
3 circles are shaded = 3
2 of 6 parts are shaded = $\frac{2}{6}$
$3\frac{2}{6}$ is the mixed number that

OR
6 equal parts in 3 circles
and 2 in the fourth circle are shaded.
20 parts are shaded.
$\frac{20}{6}$ is the improper fraction that represents the circles.

Twenty people would each get $\frac{1}{6}$ of a pie.