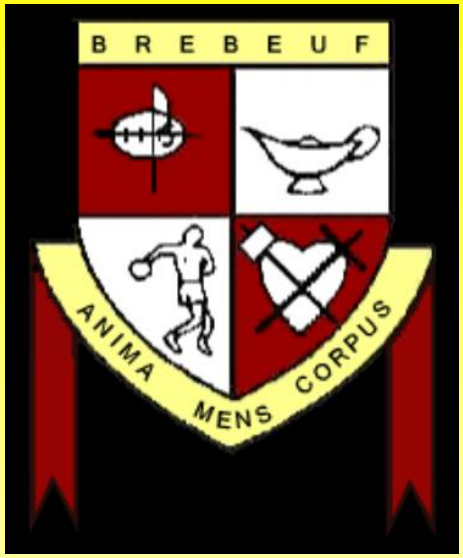


ST. JEAN DE BREBEUF
MATHEMATICS

NUMBER SENSE

OPERATIONS

WITH FRACTIONS

NUMBER SENSE

OPERATIONS WITH FRACTIONS

WRITING FRACTIONS IN LOWEST TERMS

A **fraction** can be *reduced* to lowest terms by dividing the numerator (top number) and denominator (bottom number) by a **common factor**

A number that divides *evenly* into both numbers

EXAMPLES

For each fraction, identify the **common factor** and express each fraction in lowest terms

(a) $\frac{2}{4}$ — 2 / 2 = **1**; 4 / 2 = **2**; $= \frac{1}{2}$

Common factor = **2**

(b) $\frac{3}{12}$ — 3 / 3 = **1**; 12 / 3 = **4**; $= \frac{1}{4}$

Common factor = **3**

(c) $\frac{6}{8}$ — 6 / 2 = **3**; 8 / 2 = **4**; $= \frac{3}{4}$

Common factor = **2**

NUMBER SENSE

OPERATIONS WITH FRACTIONS

WRITING FRACTIONS IN LOWEST TERMS

A **fraction** can be *reduced* to lowest terms by dividing the numerator (top number) and denominator (bottom number) by a **common factor**

EXAMPLES

For each fraction, identify the **common factor** and express each fraction in lowest terms

(d) $\frac{25}{5}$

25 / 5 = **5**

5 / 5 = **1**

$= \frac{5}{1} \; or \; 5$

Common factor = **5**

(e) $\frac{14}{8}$

14 / 2 = **7**

8 / 2 = **4**

$= \frac{7}{4}$

Common factor = **2**

NUMBER SENSE

OPERATIONS WITH FRACTIONS

OPERATIONS WITH INTEGERS AND FRACTIONS

Evaluate each expression and express each answer in lowest terms. ***
Don't forget to apply the rules for **integer** operations.

(a) $\dfrac{2+3}{13-3}$

$= \dfrac{5}{10}$ — 5 / 5 = **1**; 10 / 5 = **2**

$= \dfrac{1}{2}$

Common factor = **5**

(b) $\dfrac{-2-1}{3+9}$

$= \dfrac{-3}{12}$ — – 3 / 3 = **– 1**; 12 / 3 = **4**

$= \dfrac{-1}{4}$

Common factor = **3**

NUMBER SENSE — OPERATIONS WITH FRACTIONS

OPERATIONS WITH INTEGERS AND FRACTIONS

Evaluate each expression and express each answer in lowest terms. ***
Don't forget to apply the rules for **integer** operations.

(c) $\dfrac{45-15}{-5-5}$

$= \dfrac{30}{-10}$

30 / 10 = **3**

– 10 / 10 = **– 1**

$= \dfrac{3}{-1} \; or \; -3$

Common factor = **10**

(d) $\dfrac{-17+(-3)}{-8-(-4)}$

$= \dfrac{-17-3}{-8+4}$

$= \dfrac{-20}{-4}$

– 20 / 4 = **– 5**

– 4 / 4 = **– 1**

$= \dfrac{-5}{-1}$

$= \dfrac{5}{1} \; or \; 5$

Common factor = **4**

NUMBER SENSE

OPERATIONS WITH FRACTIONS

IMPROPER FRACTIONS AND MIXED NUMBERS

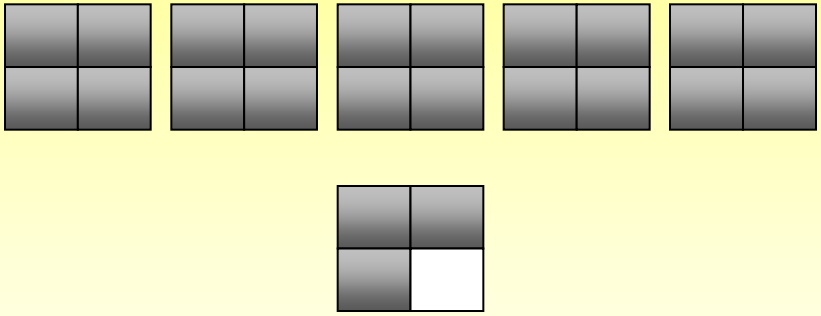
To change a **mixed number** to an **improper fraction**, you must
→Multiply the denominator (bottom number) with the whole number
→Next, add the numerator
→Put this all over the denominator

EXAMPLE:

Add

Multiply

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



$$= \frac{(4 \times 5) + 3}{4}$$

$$= \frac{20 + 3}{4}$$

$$\boxed{= \frac{23}{4}}$$

NUMBER SENSE

OPERATIONS WITH FRACTIONS

IMPROPER FRACTIONS AND MIXED NUMBERS

To change a **mixed number** to an **improper fraction**, you must
→Multiply the denominator (bottom number) with the whole number
→Next, add the numerator
→Put this all over the denominator

Convert the following **mixed numbers** to **improper fractions**:

(a) $2\frac{2}{5}$ — Multiply, Add

$$= \frac{(5\times 2)+2}{5}$$

$$= \frac{10+2}{5}$$

$$= \boxed{\frac{12}{5}}$$

(b) $3\frac{5}{7}$ — Multiply, Add

$$= \frac{(7\times 3)+5}{7}$$

$$= \frac{21+5}{7}$$

$$= \boxed{\frac{26}{7}}$$

(c) $4\frac{1}{6}$ — Multiply, Add

$$= \frac{(6\times 4)+1}{6}$$

$$= \frac{24+1}{6}$$

$$= \boxed{\frac{25}{6}}$$

Homework:

Worksheets at the end of package!