# 3.2 Adding Rational Numbers

Write each mixed number as an improper fraction:

1) $3\frac{3}{5}$ $\frac{18}{3}$

2) $-5\frac{5}{6}$ $\frac{-35}{6}$

3) Put the fractions in order from least to greatest Show all work

$-\frac{1}{2}, -\frac{4}{5}, -\frac{11}{15}, \frac{21}{32}, \frac{1}{20}$

$\frac{120}{240}$ $\frac{192}{240}$ $\frac{176}{240}$ $\frac{15}{240}$ $\frac{12}{240}$

Copy Down

# Adding Fractions

When adding fractions you need a COMMON DENOMINATOR:

1) $\frac{-5}{8} + \frac{6}{8}$

$= \frac{1}{8}$

2) $\frac{-8}{7} + \frac{-4}{7}$

$= \frac{-12}{7}$

Practice!

1) $5\frac{7}{8} + (-3\frac{1}{2})$

$\frac{47}{8} + \frac{-7}{2} \times 4$

$\frac{47}{8} + \frac{-28}{8}$

$\frac{19}{8} = 2\frac{3}{8}$

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

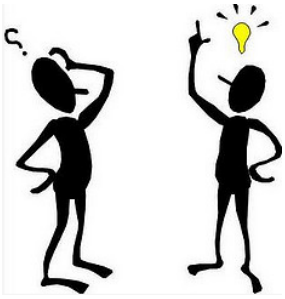
$-\frac{5}{3} \times \frac{4}{4} - \frac{9}{4}$

$-\frac{20}{12} + \frac{-27}{12}$

$\frac{-47}{12} = -3\frac{11}{12}$

## What about mixed numbers?

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



Step 1: Write each mixed number as an improper fraction.

$$\frac{7}{3} + \frac{13}{5}$$

Step 2: Find a common denominator, and then add numerators.

$\times 5$

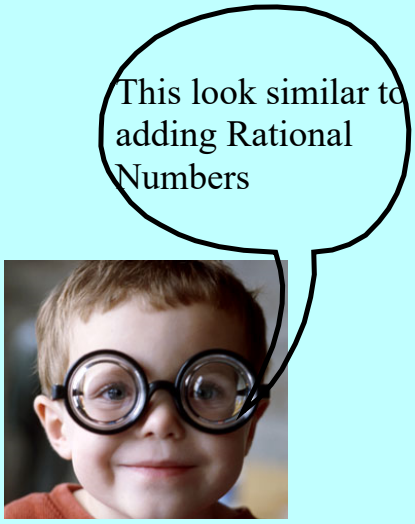
$$\frac{35}{15} + \frac{39}{15} = \frac{74}{15} = 4\frac{14}{15}$$

# Section 3.3

## Subtracting Rational Numbers

When subtracting Rational Numbers you must have a ...

**Common Denominator**




Ex) $\frac{13}{7} - \frac{4}{7} = \frac{9}{7}$ $1\frac{2}{7}$

Same Denominators

Your Turn

1) $-2\frac{2}{9} - \left(-3\frac{1}{3}\right)$

$-\frac{20}{9} - \left(-\frac{10}{3}\right)$

$-\frac{20}{9} + \left(+\frac{30}{9}\right)$

$\frac{10}{9} = 1\frac{1}{9}$

2) $6\frac{1}{2} - 3\frac{1}{7}$

$\frac{13}{2} - \frac{22}{7}$

$\frac{91}{14} - \frac{44}{14}$

$\frac{47}{14} = 3\frac{5}{14}$

# Try these out!

Use what you know about multiplying integers & fractions to evaluate the following expressions.

$\left(\frac{7}{-4}\right) \times \frac{9}{2}$

$-\frac{63}{8}$

$= -7\frac{7}{8}$

$9 \times (-3)$

$-27$

$\frac{9}{2} \times \left(\frac{-3}{10}\right)$

$\frac{-27}{20} = -1\frac{7}{20}$

☆ Don't forget to ALWAYS reduce if possible!

(-1.5) x (-1.8)

$-1.5 \times -1.8 = 2.70$

$90$

$18$

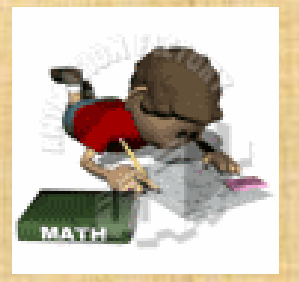
$\left(-\frac{8}{3}\right) \times \left(-\frac{6}{5}\right)$

$\frac{16}{5} = 3\frac{1}{5}$

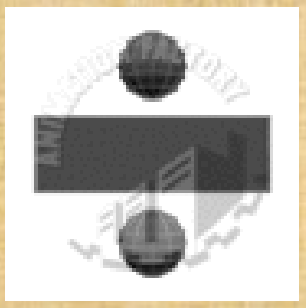
$$\left(\frac{-48}{15}\right)^{4} \quad \left(\frac{35}{12}\right)^{3}$$

$$\frac{-4}{3} \times \frac{7}{1}$$

$$-\frac{28}{3} = -9\frac{1}{3}$$




# Dividing Fractions



**#2**

$$\frac{1}{8} \div \frac{-6}{5}$$

$\frac{1}{8} \times -\frac{5}{6}$

$\frac{-5}{48}$

$$\frac{11}{3} \div \frac{5}{6}$$

$$\frac{11}{3_1} \times \frac{6^2}{5}$$

$$\frac{22}{5} = 4\frac{2}{5}$$

# Class/ Homework

Worksheet: Fraction Worksheet

(all questions)

See Next Slide for worksheet

① $\frac{13}{16}$ ② $11\frac{7}{8}$ ③ $5\frac{5}{16}$

④ $3\frac{7}{8}$ ⑤ $1\frac{5}{8}$ ⑥ $11\frac{23}{32}$

⑦ $12\frac{13}{16}$ ⑧ $16\frac{1}{4}$ ⑨ $11\frac{27}{32}$

⑩ $27\frac{7}{8}$ ⑪ $1\frac{3}{8}$ ⑫ $3\frac{5}{16}$

Sheet 2

1) 3 2) $-4\frac{1}{2}$ 3) $\frac{1}{6}$

4) $4\frac{3}{4}$ 5) $\frac{-3}{8}$ 6) $-1\frac{4}{15}$

7) 2 8) $-3\frac{1}{14}$ 9) $2\frac{1}{42}$

10) $1\frac{11}{30}$

Geometry, Measurement & Finance 10

**Assignment - Reviewing Fractional Operations**

Name: _____ Date: _____

**INSTRUCTIONS:** Perform the indicated operations on the following fractions.

1. $\frac{3}{16}+\frac{5}{8}$

2. $6\frac{1}{2}+5\frac{3}{8}$

3. $2\frac{1}{16}+3\frac{1}{4}$

4. $4\frac{5}{8}-\frac{3}{4}$

5. $\frac{7}{8}+\frac{3}{4}$

6. $3\frac{5}{32}+8\frac{9}{16}$

7. $5\frac{1}{2}+7\frac{5}{16}$

8. $8\frac{1}{2}+7\frac{3}{4}$

9. $1\frac{1}{2}+10\frac{11}{32}$

10. $12\frac{5}{8}+15\frac{1}{4}$

11. $\frac{1}{2}\times 2\frac{3}{4}$

12. $6\frac{5}{8}\div 2$

## Attachments

Worksheet - Converting Imperial Lengths.docx

Assignment - Measuring in an Imperial System.pdf

Worksheet - Fractions.docx