Curriculum Outcome

N1: Demonstrate an understanding of rational numbers by: comparing and ordering rational numbers; solving problems that involve arithmetic operations on rational numbers.

Student Friendly:
"Subtracting Fractions and Subtracting Decimals"

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Grade 9 Warm Up

Determine each sum.

1) $\frac{-5}{6} + \left(\frac{-2}{5}\right)$

$= \frac{-25}{30} + \left(\frac{-12}{30}\right)$

$= \frac{-37}{30}$

$= -1\frac{7}{30}$

2) $\frac{8}{3} + \frac{5}{4}$

$= \frac{32}{12} + \frac{15}{12}$

$= \frac{47}{12}$

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

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

$= \frac{-5}{3} + \left(\frac{16}{5}\right)$

$= \frac{-25}{15} + \left(\frac{48}{15}\right)$

$= \frac{23}{15}$

$= 1\frac{8}{15}$

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Section 3.3

Subtracting Rational Numbers

When subtracting Rational Numbers you must have a ...

Common Denominator

This look similar to adding Rational Numbers

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

Same Denominators

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You try ...

(Remember to write all solution in simplest form)

1) $\frac{21}{2} - \frac{24}{2}$

$= \frac{-3}{2}$

2) $\frac{-25}{13} - \frac{16}{13}$

$= \frac{-41}{13}$

3) $\frac{11}{4} - \frac{5}{4}$

$= \frac{6}{4}$

$= \frac{3}{2}$

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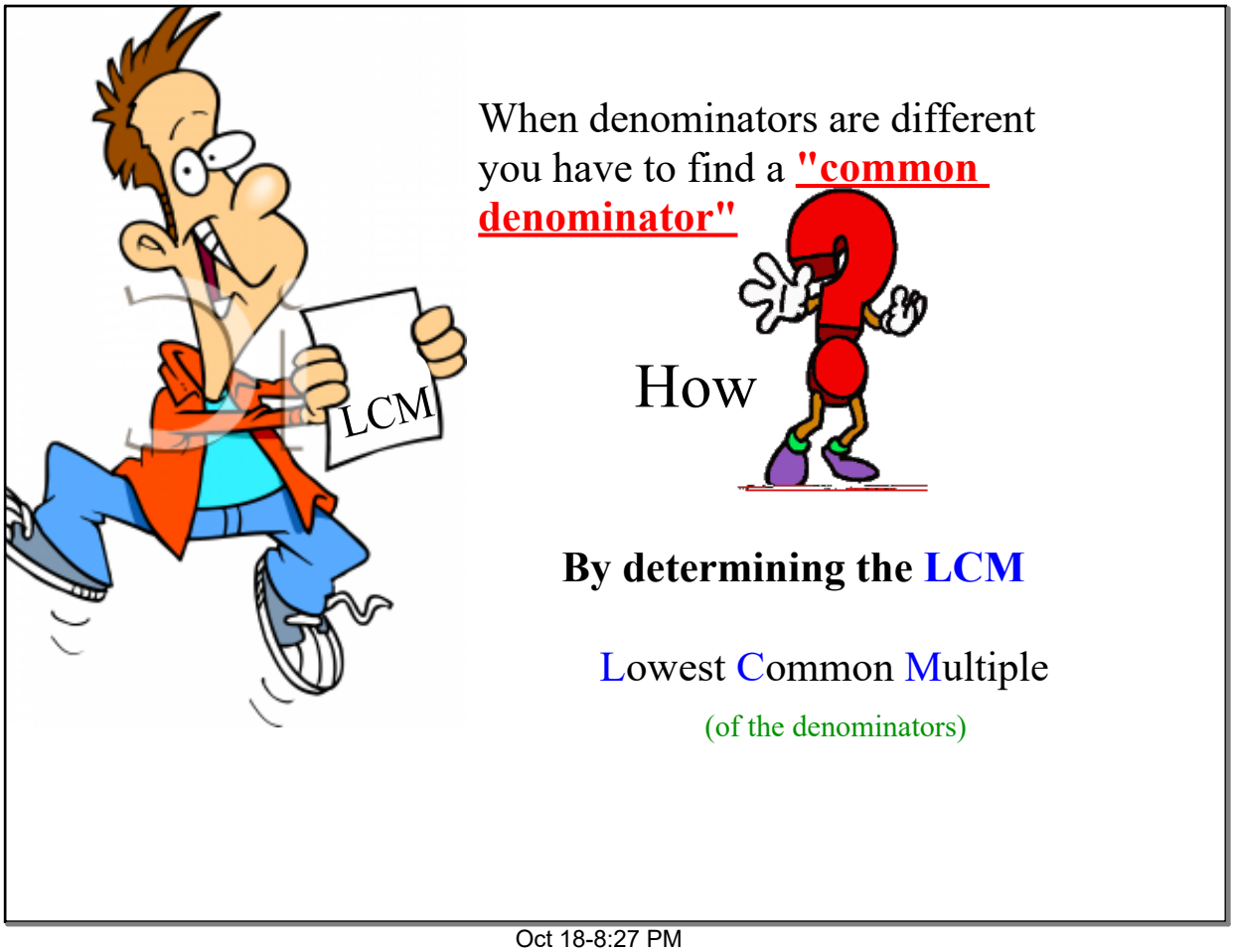

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Subtracting Negative Numbers

$8 - (-2)$ ⟶ We add the opposite: $8 + 2 = 10$

No difference with rational numbers

$\frac{6}{5} - \left(\frac{-10}{5}\right)$ ⟶ We add the opposite: $\frac{6}{5} + \frac{10}{5} = \frac{16}{5}$

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Subtract the following rational numbers

Look at the multiples of each denominator

Find the LCM

$\frac{13}{7} - \frac{4}{3}$ 7 3

$\frac{39}{21} - \frac{28}{21}$

$\frac{11}{21}$

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You try...

1) $\frac{17}{12} - \frac{4}{9}$

$\times 3$ $\times 4$

$= \frac{51}{36} - \frac{16}{36}$

$= \frac{35}{36}$

2) $\frac{-2}{7} - \frac{5}{28}$

$= \frac{-8}{28} - \frac{5}{28}$

$= \frac{-13}{28}$

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Subtracting Rational Numbers in Mixed Number Form

$3\frac{1}{5} - 2\frac{7}{10}$ Option 1

STEP 1) Write each mixed number as an improper fraction

$= \frac{16}{5} - \frac{27}{10}$

STEP 2) Find common denominators and then subtract like before

$= \frac{32}{10} - \frac{27}{10}$

$= \frac{5}{10}$

STEP 3) Reduce all fractions

$= \frac{1}{2}$

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Your Turn

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

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

$= \frac{-20}{9} + \frac{30}{9}$

$= \frac{10}{9}$

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

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Your Turn

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

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

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

$= \frac{47}{14}$

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

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

$= \frac{11}{5} - \frac{5}{1} + \frac{2}{3}$

$= \frac{33}{15} - \frac{75}{15} + \frac{10}{15}$

$= \frac{-42}{15} + \frac{10}{15}$

$= \frac{-32}{15}$

$= -2\frac{2}{15}$

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Must work with fractions when the question has all fractions

Now it is time for Home Learning

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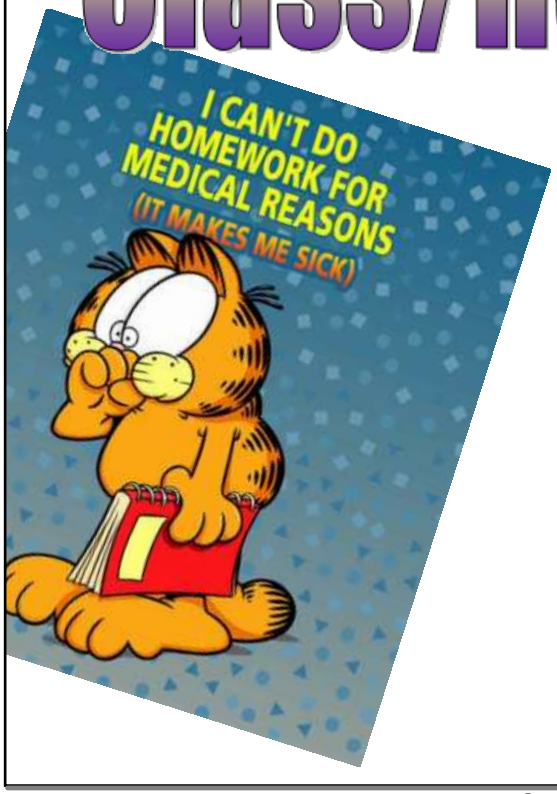
Class/Homework



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5, 6 , 7, 8

9, 11,13cd, 15ab

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