

Pre Calculus 30S

Name: _____ Date: _____

Master 7 Activate Prior Learning: 7.1b Operations on Rational Numbers

To add or subtract two rational numbers, use equivalent fractions.

- To add $-\frac{3}{4} + \frac{2}{5}$:

$-\frac{3}{4} + \frac{2}{5}$ 20 is a multiple of 4 and 5. 20 is a common denominator.

$\begin{array}{c} \times 5 \\ \curvearrowright \\ -\frac{3}{4} = -\frac{15}{20} \\ \curvearrowleft \\ \times 5 \end{array}$	$\begin{array}{c} \times 4 \\ \curvearrowright \\ \frac{2}{5} = \frac{8}{20} \\ \curvearrowleft \\ \times 4 \end{array}$
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So, $-\frac{3}{4} + \frac{2}{5} = -\frac{15}{20} + \frac{8}{20}$ Simplify.
 $= -\frac{7}{20}$

To multiply or divide two rational numbers, we do not need a common denominator.

- To divide $\frac{3}{4} \div \frac{7}{8}$: Multiply by the reciprocal of the divisor.

$= \frac{3}{4} \cdot \frac{8}{7}$	Remove a common factor of 4 from the numerator and denominator.
$= \frac{3}{\cancel{4}} \cdot \frac{\cancel{8}^2}{7}$	Multiply the numerators and multiply the denominators.
$= \frac{6}{7}$	

Check Your Understanding

1. Add or subtract.

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

b) $-\frac{5}{6} + \frac{3}{8}$

c) $\frac{7}{10} - \frac{5}{12}$

d) $\frac{5}{6} - \frac{2}{15}$

e) $\frac{1}{2} + \frac{3}{5} - \frac{7}{10}$

f) $\frac{3}{8} - \frac{2}{3} + \frac{5}{6}$

2. Multiply or divide.

a) $\frac{7}{12} \cdot \frac{4}{35}$

b) $-\frac{5}{27} \cdot \frac{9}{25}$

c) $\frac{3}{8} \div \frac{7}{24}$

d) $\frac{9}{20} \div \frac{-3}{16}$

e) $\frac{2}{7} \div \frac{8}{35} \cdot \frac{12}{25}$

f) $\frac{5}{12} \cdot \frac{3}{10} \div \frac{3}{4}$