

Pre-Algebra

Essential Question: How do we add, subtract, multiply and divide fractions and decimals?

Do Now: Perform the indicated operation.

A. $\frac{2}{5} + \frac{1}{20}$

$$\frac{8}{20} + \frac{1}{20}$$

$$\frac{9}{20}$$

B. $\frac{1}{5} \times \frac{1}{20}$

$$\frac{1}{100}$$

C. $\frac{2}{5} \div \frac{1}{20}$

Keep change flip
K.C.F.

$$\frac{2}{5} \cdot \frac{20}{1}$$

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



Let's Review Operations with Fractions and Decimals

<p>1. $4\frac{2}{3} + \frac{5}{12}$</p> $\frac{8}{12} + \frac{5}{12}$ $\frac{13}{12} \text{ or } 1\frac{1}{12}$	<p>2. $\frac{1}{3} + 4\frac{1}{9}$</p> $3\frac{1}{3} + \frac{37}{9}$ $\frac{3}{9} + \frac{37}{9}$ $\frac{40}{9} \text{ or } 4\frac{4}{9}$	<p>3. $5\frac{1}{2} - 2\frac{1}{3}$</p> $3\frac{11}{6} - \frac{7}{3}$ $\frac{33}{6} - \frac{14}{6}$ $\frac{19}{6} \text{ or } 3\frac{1}{6}$	<p>4. $1\frac{4}{5} \times 10$</p> $\frac{9}{5} \cdot \frac{10}{1}$ $\frac{18}{1} = 18$
<p>5. $2\frac{1}{2} \times 4\frac{2}{3}$</p> $\frac{5}{2} \cdot \frac{14}{3}$ $1 \frac{35}{3} \text{ or } 1\frac{2}{3}$	<p>6. $3\frac{1}{3} \div \frac{3}{5}$</p> $\frac{10}{3} \div \frac{3}{5}$ $\frac{10}{3} \cdot \frac{5}{3}$ $\frac{50}{9} \text{ or } 5\frac{5}{9}$	<p>7. $3\frac{4}{7} \div 2\frac{1}{7}$</p> $\frac{25}{7} \div \frac{15}{7}$ $5\frac{25}{7} \cdot \frac{7}{15}$ $\frac{5}{3} \text{ or } 1\frac{2}{3}$	<p>8. $0.004 + 4 + 0.04$</p> $\begin{array}{r} 0.004 \\ 4.000 \\ + 0.040 \\ \hline 4.044 \end{array}$
<p>9. $3.05 - 2.59$</p> $\begin{array}{r} 3.05 \\ - 2.59 \\ \hline 0.46 \end{array}$	<p>10. 0.9×1.25</p> $\begin{array}{r} 1.25 \\ \times .9 \\ \hline 1.125 \end{array}$	<p>11. 1.2×0.03</p> $\begin{array}{r} 1.2 \\ \times .03 \\ \hline .036 \end{array}$	<p>12. $1.8 \div 0.03$</p> $\begin{array}{r} 0.03 \overline{) 1.80} \\ \underline{60} \\ 3 \overline{) 180} \\ \underline{180} \\ 00 \end{array}$

It's Your Turn Now

<p>13. $\frac{3}{4} - \frac{1}{2} \cdot \frac{2}{2}$</p> $\frac{3}{4} - \frac{2}{4}$ $\frac{1}{4}$	<p>14. $1\frac{2}{5} + 1\frac{1}{4}$</p> $4 \cdot \frac{7}{5} + \frac{5 \cdot 5}{4 \cdot 5}$ $\frac{28}{20} + \frac{25}{20}$ $\frac{53}{20} \text{ or } 2\frac{13}{20}$	<p>15. $2\frac{3}{11} - \frac{1}{4}$</p> $4 \cdot \frac{25}{11} - \frac{1 \cdot 11}{4 \cdot 11}$ $\frac{100}{44} - \frac{11}{44}$ $\frac{89}{44} \text{ or } 2\frac{1}{44}$
<p>16. $\frac{3}{8} \div \frac{5}{8}$</p> $\frac{3}{8} \cdot \frac{8^1}{5}$ $\frac{3}{5}$	<p>17. $2\frac{2}{5} \times \frac{1}{3}$</p> $4 \frac{12}{5} \cdot \frac{1}{3}$ $\frac{4}{5}$	<p>18. $4\frac{1}{3} \div 2\frac{1}{6}$</p> $\frac{13}{3} \div \frac{13}{6}$ $\frac{13}{3} \cdot \frac{6^2}{13}$ $\frac{2}{1} = 2$
<p>19. $14 - 5.3$</p> $\begin{array}{r} 13 \\ 14.0 \\ - 5.3 \\ \hline 8.7 \end{array}$	<p>20. $6.05 \div 0.5$</p> $\begin{array}{r} 0.5 \overline{) 6.05} \\ \underline{5} \\ 12.1 \\ \underline{5} \\ 10 \\ \underline{10} \\ 05 \\ \underline{5} \\ 0 \end{array}$	<p>21. 1.4×5.2</p> $\begin{array}{r} 1.4 \\ \times 5.2 \\ \hline 28 \\ 700 \\ \hline 7.28 \end{array} \quad \begin{array}{l} 1 \\ +1 \\ \hline 2 \end{array}$

The TAKEAWAY

When performing operations with mixed numbers, it's helpful to work with an equivalent

improper fraction.

Let's Work Together

Read the following problems below and answer the question. Show all necessary work.

22. Marshall spent $\$52.60$ at the movie theater. He purchased 3 tickets and spent $\$15.85$ on popcorn and drinks. How much did one ticket cost?

$$\begin{array}{r}
 \text{Total} \quad \quad \quad \overset{4}{5} \overset{11}{2} \overset{15}{.60} \\
 - \text{Popcorn/Drinks} \quad - 15.85 \\
 \hline
 = 3 \text{ tickets} \quad \rightarrow \quad 36.75
 \end{array}$$

$$\begin{array}{r}
 12.25 \\
 3 \overline{) 36.75} \\
 \underline{- 3} \downarrow \\
 06 \quad \downarrow \\
 \underline{- 6} \downarrow \\
 07 \quad \downarrow \\
 \underline{- 6} \downarrow \\
 15 \quad \downarrow \\
 \underline{- 15} \\
 0
 \end{array}$$

$\$12.25$
cost
per
ticket

23. A group of hikers bought 8 bags of mixed nuts. Each bag contains $3\frac{1}{2}$ cups of mixed nuts. The mixed nuts are shared among 12 hikers. How many cups of mixed nuts will each hiker receive?

$$\begin{array}{c}
 8 \cdot 3\frac{1}{2} \\
 \uparrow \quad \quad \uparrow \\
 \# \text{ of} \quad \# \text{ of} \\
 \text{bags} \quad \text{cups in} \\
 \quad \quad \text{each bag}
 \end{array}$$

$$\overset{4}{8} \cdot \frac{7}{2}$$

28 cups of
mixed nuts

$$\begin{array}{c}
 28 \div 12 \\
 \uparrow \quad \quad \uparrow \\
 \text{total \#} \quad \# \text{ of} \\
 \text{of cups} \quad \text{hikers} \\
 \text{of nuts}
 \end{array}$$

$$\frac{28}{12} = 2\frac{4}{12}$$

↓

$2\frac{1}{3}$ cups of
mixed nuts
for each hiker