1) Complete the table by following the directions at the top of each column.

Write an Equivalent Fraction	Reduce the fraction	Change the improper fraction to a mixed number	Write the mixed number as an improper fraction
$\frac{1}{2} \overset{\cdot 3}{\underset{\cdot 3}{=}} \frac{3}{6}$	$\frac{5}{10} \overset{\div 5}{\underset{\div 5}{=}} \frac{1}{2}$	$\frac{5}{4} = 1\frac{1}{4}$	$2\frac{1}{2} = \frac{5}{2}$
$\frac{2}{5} = \frac{4}{10}$	$\frac{4}{6} = \frac{2}{3}$	$\frac{10}{7} = 1\frac{3}{7}$	$6\frac{1}{8} = \frac{41}{8}$
$\frac{3}{4} = \frac{12}{16}$	$\frac{16}{20} = \frac{4}{5}$	$\frac{20}{12} = 1\frac{8}{12} = 1\frac{2}{3}$	$4\frac{3}{15} = \frac{63}{15}$
$\frac{7}{8} = \frac{14}{16}$	$\frac{10}{18} = \frac{5}{9}$	$\frac{14}{4} = 3\frac{2}{4} = 3\frac{1}{2}$	$5\frac{7}{8} = \frac{47}{8}$

2) **Solve each addition/subtraction problem involving fractions and mixed numbers.**
Reminder: Make sure you have common denominators before adding or subtracting.

A) $\frac{4}{7} + \frac{6}{7} = \frac{10}{7} = \boxed{1\frac{3}{7}}$

B) $-\frac{4}{9} - \frac{1}{3}\overset{\cdot 3}{\underset{\cdot 3}{=}}$

$\frac{-4}{9} - \frac{3}{9} = \boxed{\frac{-7}{9}}$

C) $\frac{5}{6}\overset{\cdot 2}{\underset{\cdot 2}{}} + \frac{3}{4}\overset{\cdot 3}{\underset{\cdot 3}{}} =$

$\frac{10}{12} + \frac{9}{12} = \frac{19}{12} \boxed{1\frac{7}{12}}$

D) $\frac{3\frac{3}{4}}{\underset{3}{}} - \frac{11}{12} =$

$\frac{9}{12} - \frac{11}{12} = \frac{-2}{12} = \boxed{\frac{-1}{6}}$

E) $5\frac{2}{7} + 4\frac{3}{7} = 9\frac{5}{7}$

F) $4\frac{2}{5} - 3\frac{1}{5} = 1\frac{1}{5}$

G) $10\frac{7}{8} + 3\frac{3}{8} = 13\frac{10}{8}$

$= 14\frac{2}{8} = \boxed{14\frac{1}{4}}$

H) $5\frac{1}{6}\overset{\cdot 3}{\underset{\cdot 3}{}} + 11\frac{5}{9}\overset{\cdot 2}{\underset{\cdot 2}{}} =$

$5\frac{3}{18} + 11\frac{10}{18} = \boxed{16\frac{13}{18}}$

I) $6\frac{1}{2}\overset{\cdot 5}{\underset{\cdot 5}{}} + 7\frac{7}{10} =$

$6\frac{5}{10} + 7\frac{7}{10} = 13\frac{12}{10}$

$= 14\frac{2}{10}$

$\boxed{= 14\frac{1}{5}}$

J) $4\frac{3}{4}\cdot\frac{5}{} - 1\frac{2}{5}\cdot\frac{4}{} =$

$4\frac{15}{20} - 1\frac{8}{20} = \boxed{3\frac{7}{20}}$

K) $9 - 7\frac{4}{5} =$

$8\frac{5}{5} - 7\frac{4}{5} = \boxed{1\frac{1}{5}}$

L) $8\frac{1}{6} - 3\frac{2}{3}\cdot\frac{2}{2} =$

$8\frac{1}{6} - 3\frac{4}{6}$

$7\frac{7}{6} - 3\frac{4}{6} = 4\frac{3}{6}$

$\boxed{4\frac{1}{2}}$

3) Find the product of the following multiplication problems.

<u>Reminders:</u>   1) You don't need common denominators.
                  2) Turn mixed numbers into improper fractions.
                  3) Look to cross simplify if possible. Multiply straight across

A) $\frac{1}{2}\times\frac{\cancel{6}^3}{10} = \frac{3}{10}$

B) $\frac{\cancel{1}}{\cancel{8}}\times\frac{\cancel{16}^2}{\cancel{24}_3} = \frac{2}{3}$

C) $5\times\frac{6}{11} =$

$\frac{5}{1}\cdot\frac{6}{11} = \frac{30}{11} = \boxed{2\frac{8}{11}}$

D) $3\times5\frac{2}{3} = 17$

$\frac{\cancel{3}^1}{1}\cdot\frac{17}{\cancel{3}_1}$

E) $4\frac{3}{5}\times6 =$

$\frac{23}{5}\cdot\frac{6}{1} = \frac{138}{5}$

$= \boxed{27\frac{3}{5}}$

F) $2\frac{1}{4}\times4\frac{2}{3} =$

$\frac{\cancel{9}^3}{\cancel{4}_2}\cdot\frac{\cancel{14}^7}{\cancel{3}_1} = \frac{21}{2}$

$= \boxed{10\frac{1}{2}}$

G) $\frac{3}{4}\times5\frac{1}{5} =$

$\frac{3}{\cancel{4}_2}\cdot\frac{\cancel{26}^{13}}{5} = \frac{39}{10}$

$= \boxed{3\frac{9}{10}}$

H) $3\frac{1}{8}\times9\frac{3}{5} =$

$\frac{\cancel{25}^5}{\cancel{8}_1}\cdot\frac{\cancel{48}^6}{\cancel{5}_1} = \frac{30}{1}$

$= \boxed{30}$

I) $\frac{8}{9}\times3\frac{3}{4} =$

$\frac{\cancel{8}^2}{\cancel{9}_3}\cdot\frac{\cancel{15}^5}{\cancel{4}_1} = \frac{10}{3}$

$= \boxed{3\frac{1}{3}}$

4) Find the quotient of the following division problems.

Reminders: 1) You don't need common denominators.
2) Turn mixed numbers into improper fractions.
3) Use the process **SAME → CHANGE → FLIP** to turn the division problem into a multiplication problem.
4) Look to cross simplify if possible. Multiply straight across

A) $\dfrac{3}{5} \div \dfrac{7}{10} =$

$\dfrac{3}{5} \cdot \dfrac{10\,^2}{7} = \boxed{\dfrac{6}{7}}$

B) $\dfrac{1}{4} \div \dfrac{1}{2} =$

$\dfrac{1}{2\,4} \cdot \dfrac{2\,^1}{1} = \boxed{\dfrac{1}{2}}$

C) $\dfrac{4}{5} \div \dfrac{8}{15} =$

$\dfrac{{}^1 4}{1\,5} \cdot \dfrac{15\,^3}{8\,_2} = \dfrac{3}{2} = \boxed{1\tfrac{1}{2}}$

D) $\dfrac{3}{8} \div 2\dfrac{1}{4} =$

$\dfrac{3}{8} \div \dfrac{9}{4}$

$\downarrow$

$\dfrac{3}{2\,8} \cdot \dfrac{4\,^1}{9\,_3} = \boxed{\dfrac{1}{6}}$

E) $5 \div \dfrac{2}{3} =$

$\dfrac{5}{1} \cdot \dfrac{3}{2} = \dfrac{15}{2} = \boxed{7\tfrac{1}{2}}$

F) $1\dfrac{5}{8} \div 1\dfrac{1}{4} =$

$\dfrac{13}{8} \div \dfrac{5}{4}$

$\downarrow$

$\dfrac{13}{2\,8} \cdot \dfrac{4\,^1}{5} = \dfrac{13}{10} = \boxed{1\tfrac{3}{10}}$

5) Solve the following word problems. Write out the addition, subtraction, multiplication, or division problem you solved to find your answer. Circle any key words they help you decide what operation to use. SHOW WORK

A) A landscaper is building a retaining wall that is $16\dfrac{2}{3}$ feet long. The blocks used for each row of the wall are $\dfrac{5}{6}$ of a foot long. How many blocks does he need for each row?

$16\dfrac{2}{3} \div \dfrac{5}{6} \rightarrow \dfrac{50}{3} \div \dfrac{5}{6} \rightarrow \dfrac{50}{3}\,^{10} \cdot \dfrac{6\,^2}{5\,_1} = \boxed{20 \text{ blocks}}$

B) Sam works $8\dfrac{7}{9}$ hours in day 1 and $6\dfrac{1}{2}$ in day 2. How many total hours does he work in both days?

$8\dfrac{7 \cdot 2}{9 \cdot 2} + 6\dfrac{1 \cdot 9}{2 \cdot 9} \rightarrow 8\dfrac{14}{18} + 6\dfrac{9}{18} = 14\dfrac{23}{18} = \boxed{15\tfrac{5}{18} \text{ hours}}$

C) A field trip is planned which is 10 miles from school. A wheel on the of the school bus is punctured after $5\frac{3}{5}$ miles. How many miles are left to reach the field trip location?

$$10 - 5\frac{3}{5} \rightarrow 9\frac{5}{5} - 5\frac{3}{5} = \boxed{4\frac{2}{5} \text{ miles}}$$

D) The recipe for a strawberry smootie calls for $1\frac{3}{5}$ cups of strawberries. If you want to double the recipe, how many cups of strawberries do you need?

$$1\frac{3}{5} \cdot 2 \rightarrow \frac{8}{5} \cdot \frac{2}{1} = \frac{16}{5} = \boxed{3\frac{1}{5} \text{ cups}}$$

E) Sarah runs $3\frac{1}{10}$ miles in $\frac{3}{5}$ of an hour. What is her speed in miles per hour?

Hint: $\frac{miles}{hour} = miles\ per\ hour$

$$3\frac{1}{10} \div \frac{3}{5} \rightarrow \frac{31}{10} \div \frac{3}{5} \rightarrow \frac{31}{\underset{2}{10}} \cdot \frac{\overset{1}{5}}{3} = \frac{31}{6} = \boxed{5\frac{1}{6}\ mi/h}$$

F) Hank is watching a movie and the power goes out. The total length of the movie is $2\frac{4}{5}$ hours. Hank managed to watch only $1\frac{1}{4}$ hours. How much time is left to finish the movie?

$$2\frac{4 \cdot 4}{5 \cdot 4} - 1\frac{1 \cdot 5}{4 \cdot 5} \rightarrow 2\frac{16}{20} - 1\frac{5}{20} = \boxed{1\frac{11}{20}\ hr}$$

G) Hank is selling slices of pizza at a basketball game and has $4\frac{1}{8}$ pizzas left at the beginning of the second half. He ends up selling $\frac{2}{3}$ of the remaining pizza in the second half. How much of the remaining pizza did he sell in the second half.

$$4\frac{1}{8} \cdot \frac{2}{3} \rightarrow \frac{\overset{11}{33}}{\underset{4}{8}} \cdot \frac{\overset{1}{2}}{\underset{1}{3}} = \frac{11}{4} = \boxed{2\frac{3}{4} \text{ pizzas}}$$